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## Revised Corrective Action Plan for RNA with MEMEs and Air Sparge

MAPCO 5605 – Discount Food Mart #183

132 South Lafayette Street | Lafayette, Chambers County, Alabama

UST94-02-01, Facility ID No. 15420-017-003301, ATTF CP #40

PM Project Number 70-800-I

*Prepared for:*

**MAPCO Express, Inc.**

801 Crescent Centre, Suite 300

Franklin, Tennessee 37067

*Prepared by:*

**PM Environmental, Inc.**

717 Highway 67 South, Suite 26

Decatur, Alabama 35603

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June 5, 2017

Alabama Department of Environmental Management  
Post Office Box 301463  
Montgomery, Alabama 36130-1463

Attn: Ms. Kayla White Lewis, Hydrogeologist

**RE: Revised Corrective Action Plan for RNA with MEMEs and Air Sparge**  
Former MAPCO #5605 (Discount Food Mart #183)  
132 South Lafayette Street  
Lafayette, Chambers County, Alabama  
Facility ID. No. 15420-017-003301  
UST Incident No. UST94-02-01  
ATTF Cost Proposal No. 40  
PM Project No. 70-800-I

Dear Ms. Lewis:

On behalf of MAPCO Express Inc, PM Environmental, Inc. (PM) is pleased to present this Revised Corrective Action Plan for MAPCO #5605 (DFM #183), located in Lafayette, Chambers County, Alabama. This report details the remedial method selected with the Corrective Action Evaluation conducted under approved CP #39.

If you have any questions, please feel free to contact L. Gregory Stephenson in our Cookeville, Tennessee office at (931) 432-5552 or Wesley Henson in our Decatur, Alabama office at (256) 353-6222.

Sincerely,  
**PM Environmental, Inc.**

Wesley P. Henson, P.G.  
Project Manager  
Alabama P.G. No. 1385

L. Gregory Stephenson, P.G.  
Vice President/Senior Geologist  
Alabama P.G. No. 742

cc: MAPCO Express, Inc.

**PM ENVIRONMENTAL, INC.**  
**RISK WELL MANAGED**

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**PROJECT NO. 70-800-I**

**REVISED CORRECTIVE ACTION PLAN**

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**Site Location:**

**Former MAPCO #5605  
(DISCOUNT FOOD MART #183)  
132 SOUTH LAFAYETTE STREET  
LAFAYETTE, CHAMBERS COUNTY, ALABAMA  
FACILITY ID. NO. 15420-017-003301  
UST INCIDENT NO. UST94-02-01  
ATTF COST PROPOSAL #40**

**JUNE 5, 2017**

**Prepared for:**

**MAPCO EXPRESS, INC.  
801 CRESCENT CENTRE, SUITE 300  
FRANKLIN, TENNESSEE 37067**

**Prepared by:**

**PM ENVIRONMENTAL, INC.  
717 HWY 67 S. SUITE 26  
DECATUR, ALABAMA 35603**

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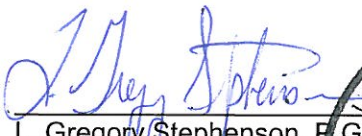
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**CERTIFICATION PAGE**

*"I certify under penalty of law that this Revised Corrective Action Plan and all figures, specifications, and technical data submitted within were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiring of the person or persons who directly gathered the enclosed information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information. "*

  
L. Gregory Stephenson, P.G.  
Alabama P.G. No. 742  
Date: June 5, 2017



**Revised Corrective Action Plan for Former MAPCO #5605 (DFM #183)**  
**Located at 132 South Lafayette Street, Lafayette, Chambers County, Alabama**  
**Facility I.D. No. 15420-017-003301; UST Incident No UST94-02-01**

**1.0 UST RELEASE FACT SHEET & SITE CLASSIFICATION FORM**

**UST RELEASE FACT SHEET**

**GENERAL INFORMATION:**

SITE NAME: MAPCO #5605 (Discount Food Mart #183)  
ADDRESS: 132 South Lafayette Street, Lafayette, Chambers County, Alabama  
FACILITY I.D. NO.: 15420-017-003301  
UST INCIDENT NO.: UST94-02-01

**RESULTS OF EXPOSURE ASSESSMENT:**

How many private drinking water wells are located within 1,000 ft. of site?	0
How many public water supply wells are located within 1 mile of the site?	0
Have any drinking water supply wells been impacted by contamination from this release?	No
Is there an imminent threat of contamination to any drinking water wells?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Have vapors or contaminated groundwater posed a threat to the public?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are any underground utilities impacted or imminently threatened by the release?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Have surface waters been impacted by the release?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is there an imminent threat of contamination to surface waters?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
What is the type of surrounding population?	Commercial/ Residential

**CONTAMINATION DESCRIPTION:**

Type of contamination at site: <input checked="" type="checkbox"/> Gasoline, <input type="checkbox"/> Diesel, <input type="checkbox"/> and Waste Oil <input type="checkbox"/> Kerosene, <input type="checkbox"/> Other _____
Free product present in wells? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Maximum thickness measured:
Maximum TPH concentrations measured in soil: No soil samples collected during this event
Maximum BTEX or PAH concentrations measured in groundwater: This event: BTEX 0.00377 ppm in MW-3 (05/08/17), Max. BTEX at 29.8 ppm in MW-2 (12/18/95),

ADEM GROUNDWATER BRANCH



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**Located at 132 South Lafayette Street, Lafayette, Chambers County, Alabama**  
**Facility I.D. No. 15420-017-003301; UST Incident No UST94-02-01**

**UST SITE CLASSIFICATION SYSTEM  
CHECKLIST**

Please read all of the following statements and mark either yes or no if the statement applies to your site. If you have conducted a Preliminary or Secondary Investigation, all questions should be answered. Closure site assessment reports may not provide you with all the necessary information, but answer the statements with the knowledge obtained during the closure site assessment.

SITE NAME:	MAPCO #5605 (Former Discount Food Mart #183)
SITE ADDRESS:	132 South Lafayette Street
	Lafayette, Chambers County, Alabama
FACILITY I.D. NO.:	15420-017-003301
UST INCIDENT NO.:	UST94-02-01
OWNER NAME:	MAPCO Express, Inc.
OWNER ADDRESS:	801 Crescent Centre, Suite 300, Franklin, TN 37067
NAME & ADDRESS OF PERSON COMPLETING THIS FORM:	Wesley P. Henson
	PM Environmental, Inc.
	717 Highway 67 South, Suite 26
	Decatur, AL 35603

CLASSIFICATION	DESCRIPTION	YES	NO
CLASS A	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
A.1	Vapor concentrations at or approaching explosive levels that could cause health effects, are present in a residence or building.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A.2	Vapor concentrations at or approaching explosive levels are present in subsurface utility system(s), but no buildings or residences are impacted.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CLASS B	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
B.1	An active public water supply well, public water supply line, or public surface water intake is impacted or immediately threatened.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B.2	An active domestic water supply well, domestic water supply line or domestic surface water intake is impacted or immediately threatened.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B.3	The release is located within a designated Wellhead Protection Area I.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CLASS C	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
C.1	Ambient vapor/particulate concentrations exceed concentrations of concern from an acute exposure, or safety viewpoint.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.2	Free product is present on the groundwater, at ground surface, on surface water bodies, in utilities other than water supply lines, or in surface water runoff.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Revised Corrective Action Plan for Former MAPCO #5605 (DFM #183)**  
**Located at 132 South Lafayette Street, Lafayette, Chambers County, Alabama**  
**Facility I.D. No. 15420-017-003301; UST Incident No UST94-02-01**

<b>CLASSIFICATION</b>	<b>DESCRIPTION</b>	<b>YES</b>	<b>NO</b>
<b>CLASS D</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
D.1	There is a potential for explosive levels, or concentrations of vapors that could cause acute effects, to accumulate in a residence or other building.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D.2	A non-potable water supply well is impacted or immediately threatened.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D.3	Shallow contaminated surface soils are open to public access, and dwellings, parks, playgrounds, day care centers, schools or similar use facilities are within 500 feet of those soils.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>CLASS E</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
E.1	A sensitive habitat or sensitive resources (sport fish, economically important species, threatened and endangered species, etc.) are impacted and affected.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>CLASS F</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
F.1	Groundwater is impacted and a public well is located within 1 mile of the site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F.2	Groundwater is impacted and a domestic well is located within 1,000 feet of the site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F.3	Contaminated soils and/or groundwater are located within designated Wellhead Protection Areas (Areas II or III).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>CLASS G</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
G.1	Contaminated soils and/or groundwater are located within areas vulnerable to contamination from surface sources.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>CLASS H</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
H.1	Impacted surface water, stormwater or groundwater discharges within 500 feet of a surface water body used for human drinking water, whole body water-contact sports, or habitat to a protected or listed endangered plant and animal species.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>CLASS I</b>	<b>LONG TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
I.1.	Site has contaminated soils and/or groundwater but does not meet any of the above-mentioned criteria.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**ADDITIONAL COMMENTS:**

**Complete the classification evaluation questions listed above. Upon completion, determine the highest rank of the site (A.1 is the highest rank) based on the statements answered with a yes.**

Enter the determined classification ranking:	I.1
--	-----

ADEM GROUNDWATER BRANCH  
SITE CLASSIFICATION CHECKLIST (5/8/95)

## **2.0 INTRODUCTION**

This Revised Corrective Action Plan has been prepared in response to a directive provided by the Alabama Department of Environmental Management (ADEM) and was developed in accordance with the CAP requirements of the ADEM Administrative Code R. 335-6-15-29. ADEM requires that corrective actions be taken when soil and/or groundwater contamination is found to exceed the established corrective action limits. Measured concentrations of gasoline constituents in the groundwater at the subject site exceed the established corrective action limits. The objective of this CAP is to:

- Evaluate the current condition of the groundwater contamination at the subject site;
- Explain the selected remediation technology which will result in groundwater contaminants below the corrective action limits in an effective and timely matter.

The current Alabama Risk Based Corrective Action (ARBCA) Site Specific Target Levels (SSTL's) for groundwater constituents present at the subject site are presented within the analytical summary tables (see Table 1 for soil data and Table 2 for groundwater data) in Appendix A. However, currently there is only groundwater contamination above the SSTLs that requires remediation.

### **2.1 Geographic Location**

Former MAPCO #5605 (subject property) located at the SW ¼ of the NW ¼, of Section 13, Township 22 North, Range 26 East on the Lafayette Quadrangle of Alabama, United States Geological Survey (USGS) 7.5 Minute Series Topographic Map (Figure 1-Property Vicinity Map). The physical address of the site is 132 South Lafayette Street, Lafayette, Chambers County, Alabama. Figure 1 (Property Vicinity Map) shows the topography of the area as recorded in 1971 (photo revised 1973).

### **2.2 Site Description**

The site is currently an in-active retail fuel/convenience store. The site consists of approximately 0.25 acres of property at the northeastern corner of the intersection of the South Lafayette Street and Second Drive Southeast in Lafayette, Alabama. The site is approximately 99% covered with asphalt, concrete, or building foundations. Figure 2 (Site Map) illustrates the site layout.

Two underground storage tanks (USTs) are located at the site. The UST system at the site consists of two 10,000-gallon cathodically protected steel tanks containing regular gasoline and premium gasoline, associated product piping, and one dual-sided multi product dispenser situated southwest of the UST basin.

### **2.3 Site History and Status**

In September 1993, soil contamination (Total petroleum hydrocarbons [TPH]) was discovered during a product line upgrade. In September 1994, a Preliminary Investigation was conducted by Environmental Science and Engineering (ESE). Monitoring wells MW-1 through MW-4 were installed and laboratory results did not indicate the presence of TPH in soil above the corrective action limit (CAL). However,

Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) contamination was detected in several wells. A Secondary Investigation was conducted by ESE in November 1995. Monitoring wells MW-5 through MW-7 were installed and laboratory results did not indicate the presence of TPH in soil above the CALs; however, BTEX contamination was again detected in several wells.

An Additional Secondary Investigation was conducted in September 1996 by Bhate Environmental, Inc. (BEI). Monitoring wells MW-8 through MW-12 were installed and laboratory results did not indicate the presence of TPH in soil above the CALs; however, BTEX contamination was again detected in several wells. In November 2004, BEI conducted ARBCA data acquisition activities that included the installation of monitoring wells MW-13 through MW-16. The ARBCA Tier I/II Evaluation was conducted and site specific target levels (SSTLs) were approved by ADEM in May 2005. At this time a Corrective Action Plan (CAP) was requested by ADEM.

In October 2006, SEMS of Nashville (SEMS), submitted a Remediation by Natural Attenuation (RNA) CAP and it was subsequently approved for implementation in March 2007. From March 2007 to April 2009 SEMS conducted numerous groundwater monitoring events and submitted Natural Attenuation Monitoring Reports (NAMRs) to ADEM on a quarterly basis.

Beginning in September 2010, PM Environmental, Inc. (PM) was selected as the environmental consultant for MAPCO Express, Inc. Since September 2010, PM has conducted MEME events and groundwater monitoring events as approved by ADEM.

In the RNA with MEMEs Report dated September 20, 2013, the conclusion noted that "in regards to the rising levels of MTBE in groundwater at the subject property, MAPCO Express Inc. sold the subject property to Lafayette Property Partners, LLC on June 15, 2009, and the transfer of ownership of the UST system was dated July 2, 2009. According to the groundwater analytical data table, steady MTBE level increases began between May of 2010 and May of 2011 in monitoring wells MW-2 and MW-3. It is the professional opinion of PM Environmental the potential exists for an ongoing release at the site." However, according to a neighboring business owner the onsite store closed on or about October 31, 2016. PM has been unable to determine if the UST system has been properly placed as Temporarily Out of Service (TOS) with ADEM. During the most recent monitoring period the onsite store was remodeled, and is anticipated to re-open as a Pacecar Express gasoline station and convenience store.

Since September 2013 PM has been conducting three MEME events and one groundwater monitoring event during each tri-annual period. These efforts have significantly reduced the MTBE concentrations in groundwater; however, MTBE concentrations still exceed the approved SSTLs in MW-2 and MW-3. Currently MTBE is the only chemical of concern above the SSTLs. There are no soil concentrations above the SSTLs.

## **2.4 Surrounding Development**

The subject property is located at the northeastern corner of the intersection of the South Lafayette Street and Second Drive Southeast in Lafayette, Alabama. The subject property is bordered by an office building to the east, a former gas station currently

occupied by a car wash business to the south, a former restaurant to the west, and a commercial business to the north. Please refer to Figure 3, the 500 Foot Radius Map, for surrounding development details.

## **2.5 Water Well Inventory**

No public water supply wells were identified within a 1,000 ft radius of the site. Public water to the site is supplied by the City of Lafayette, which utilizes surface water as its primary source. A public water intake is not located within one mile of the site. Active water supply wells are not located within 1,000 feet of the site.

## **2.6 Underground Utilities**

Underground water, sewer, and telephone enter the on-site convenience store on the west side of the building. Underground gas lines run along the south side of the property parallel to Second Drive SW. Electrical lines and telephone lines are overhead in the utility corridor to the south and west. Due to the depth of groundwater at 32.80 to 37.14 feet below top of casing (TOC), it is not likely that underground utilities would become a conduit for migration. (See Figure 2- Generalized Diagram of the Subject Property and Adjoining Properties Map).

## **2.7 Regional Geology and Hydrology**

The subject site is located in the Opelika Plateau District of the Piedmont Physiographic Section. The altitude in the Opelika Plateau District ranges from 550 to 900 feet above mean sea level. The area is underlain by the Camp Hill Granite Gneiss. The Camp Hill Granite Gneiss consists of coarse to medium grained foliated granite and quartz diorite gneiss, locally biotite rich with thin amphibolite pods and lenses. The formation is highly fractured in some areas. The estimated thickness of the Camp Hill Granite Gneiss ranges from approximately 1,000 to 2,200 feet.

The Camp Hill Granite Gneiss is considered to be a poor aquifer. Generally, water yields to wells in the region may be up to 100 gallons per minute. Movement of groundwater in the Camp Hill Granite Gneiss may be influenced by areas underlain by enlarged fractures and opening in solution cavities.

## **2.8 Local Geology and Hydrology**

The subject site is located at an elevation of approximately 840 feet above mean sea level. Visual characterization of soil samples and drill cuttings indicate the site is underlain by sand, silt, and clay. Sand and clay with silt was generally encountered at depths ranging from five to 30 feet below ground surface (bgs). Sand was generally encountered below approximately 30 feet bgs, according to historical records.

During the most recent groundwater monitoring event on May 8, 2017, the depth to groundwater ranged from 32.80 to 37.14 feet below TOC. The potentiometric surface map derived from data collected on May 8, 2017 is included as Figure 4. Refer to Table 2 in Appendix A for historic water level measurements.

There are no known uses of groundwater from the uppermost-saturated zone at the site. Interconnection of this zone with the underlying aquifer is likely on a regional basis. This interconnection is controlled by the presence of secondary porosity features, such as fracturing and/or dissolution. The presence or extent of such secondary porosity features at the site is unknown. This interconnection is controlled by the presence of secondary porosity features, such as fracturing and/or dissolution. The presence or extent of such secondary porosity features at the site is unknown.

## **2.9 Groundwater Flow and Gradient**

Data gathered during previous investigations at the subject property indicated groundwater flow at the subject property is generally to the northeast and east. A potentiometric surface elevation map based on static water level readings recorded May 8, 2017 is included as Figure 4 of this report. Static water level readings and well construction data are summarized in Appendix A Table 2. The groundwater gradient (i) as calculated during the ARBCA Evaluation was 0.1176. Additionally, during the Secondary Investigation a series of slug test were performed to determine the average hydraulic conductivity in the saturated zone. The hydraulic conductivity was recorded to be  $6.55 \times 10^{-4}$  cm/second. The calculated Darcy velocity in the ARBCA Evaluation was 2,429 cm/year.

## **2.10 Surface Water Drainage**

Local drainage patterns were assessed through subject property reconnaissance and a review of the USGS topographic map. Surface runoff from the site generally flows east into an unnamed tributary of the Chattahoochee River. This unnamed tributary is located approximately 1,500 feet west of the site (Figure 1).

## **2.11 Physical Soil Characteristics**

Two undisturbed soil samples were collected at the subject property using a thin walled (Shelby) tube sampler, under the direction of a previous consultant. The sample was analyzed for the physical characteristics as discussed in the ADEM guidelines. The results as reported in the ARBCA Evaluation are summarized as follows:

Parameter	Vadose Zone	Saturated Zone
Volumetric Water Content [cc/cc]	0.1119	N/A
Dry Density [g/cm <sup>3</sup> ]	1.05	1.05
Estimated Porosity ( $n_e$ ) [cm <sup>3</sup> / cm <sup>3</sup> ]	0.3	0.3
Fractional Organic Carbon [g-C/g-Soil]	0.0421	0.0421

## **3.0 SUMMARY OF PREVIOUSLY CONDUCTED SITE ASSESSMENTS AND REMEDIAL ACTIVITIES**

This section summarizes the previously conducted site assessments including the Preliminary Investigation, the Secondary Investigation, the Additional Secondary Investigation, Groundwater Monitoring Reports, and the Tier II Alabama Risk Based Corrective Action Report.

**Revised Corrective Action Plan for Former MAPCO #5605 (DFM #183)**  
**Located at 132 South Lafayette Street, Lafayette, Chambers County, Alabama**  
**Facility I.D. No. 15420-017-003301; UST Incident No UST94-02-01**

Date:	Chronology Of Events
September 1993	Soil contamination (Total petroleum hydrocarbons [TPH]) was discovered during a product line upgrade.
September 1994	Preliminary Investigation conducted by ESE. Laboratory results did not indicate the presence of TPH in soil above the corrective action limits (CAL). Benzene, toluene, ethylbenzene, and xylenes (BTEX) was detected in several wells.
November 1995	Secondary Investigation conducted by ESE. Laboratory results did not indicate the presence of TPH in soil above the CAL. BTEX contamination was detected in several wells.
March 1996	ADEM requests additional secondary investigation activities.
July 1996	Additional Secondary Investigation activities conducted by Bhate. Laboratory results did not indicate the presence of TPH in soil above the CAL. BTEX contamination was detected in several wells.
November 2004	Alabama Risk Based Corrective Action (ARBCA) data acquisition activities were conducted at the site.
January 2005	ARBCA Tier I/Tier II Risk Assessment submitted by Bhate.
May 2005	ADEM approved SSTLs and requests Corrective Action Plan (CAP).
October 2006	CAP submitted by SEMS Environmental
March 2007	ADEM approved CAP for Remediation by Natural Attenuation (RNA).
March 2007 to April 2009	Natural Attenuation Monitoring Reports were submitted to ADEM by SEMS
July 2010	Natural Attenuation Monitoring Report was submitted to ADEM by PM Environmental, Inc.
September 2010	Natural Attenuation Monitoring Report was submitted to ADEM by PM.
June 2011	A Free Product Recovery and Groundwater Monitoring Report was submitted to ADEM by PM.
February 2012	Natural Attenuation Monitoring Report was submitted to ADEM by PM.
April 2012	Free Product Recovery and Groundwater Monitoring Report was submitted to ADEM by PM.
June 2012	Natural Attenuation Monitoring Report was submitted to ADEM by PM.
October 2012	Natural Attenuation Monitoring Report was submitted to ADEM by PM.
February 2013	Natural Attenuation Monitoring Report was submitted to ADEM by PM.
September 2013	Natural Attenuation Monitoring Report with MEME Events was

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Date:	Chronology Of Events
	submitted to ADEM by PM.
December 2013	Natural Attenuation Monitoring Report with MEME Events was submitted to ADEM by PM.
September 2014	Natural Attenuation Monitoring Report was submitted to ADEM by PM.
December 2014	Natural Attenuation Monitoring Report was submitted to ADEM by PM.
October 2015	Natural Attenuation Monitoring Report with MEME Events was submitted to ADEM by PM.
February 2016	Natural Attenuation Monitoring Report with MEME Events was submitted to ADEM by PM.
June 2016	Natural Attenuation Monitoring Report with MEME Events was submitted to ADEM by PM.
October 2016	Natural Attenuation Monitoring Report with MEME Events was submitted to ADEM by PM.
January 2017	Corrective Action Evaluation was submitted to ADEM by PM.
February 2017	Natural Attenuation Monitoring Report with MEME Events was submitted to ADEM by PM.
June 2017	Natural Attenuation Monitoring Report with MEME Events was submitted to ADEM by PM.
June 2017	Revised Corrective Action Plan submitted to ADEM by PM.

### **3.1 Preliminary Investigation**

In September 1994, a Preliminary Investigation was conducted by Environmental Science and Engineering (ESE). Monitoring wells MW-1 through MW-4 were installed and laboratory results did not indicate the presence of TPH in soil above the corrective action limit (CAL). However, Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) contamination was detected in several wells.

### **3.2 Secondary Investigation**

A Secondary Investigation was conducted by ESE in November 1995. Monitoring wells MW-5 through MW-7 were installed and laboratory results did not indicate the presence of TPH in soil above the CALs; however, BTEX contamination was again detected in several wells. An Additional Secondary Investigation was conducted in September 1996 by Bhate Environmental, Inc. (BEI). Monitoring wells MW-8 through MW-12 were installed and laboratory results did not indicate the presence of TPH in soil above the CALs; however, BTEX contamination was again detected in several wells.



### **3.3 ARBCA Tier 1 and Tier 2 Risk Assessment**

In November 2004, BEI conducted ARBCA data acquisition activities that included the installation of monitoring wells MW-13 through MW-16. The ARBCA Tier I/II Evaluation was conducted and site specific target levels (SSTLs) were approved by ADEM in May 2005. The current ARBCA SSTLs for soil and groundwater constituents present at the subject site are presented within the analytical summary tables (see Table 1 for soil data and Table 2 for groundwater data) in Appendix A.

### **3.4 Soil Investigation**

A total of 20 soil borings (MW-1 through MW-16, SB-1 through SB-3, and ST-1) were installed by others during previous site investigations. Soil samples collected from these borings did not indicate concentrations of chemicals of concern above the approved ARBCA SSTLs. All soil borings and well installations were conducted by previous consultants. The available historical soil analytical data is presented on Table 1 in Appendix A.

### **3.5 Groundwater Monitoring Events**

PM has conducted 18 groundwater monitoring events between 2010 and 2017. The analytical results from these sampling events have further defined the plume of dissolved phase groundwater contaminants and the direction of groundwater flow. The historical groundwater analytical data table is presented on Table 2 in Appendix A. Table 3 of Appendix A contains the groundwater intrinsic parameters recorded during monitoring events. The current Groundwater MTBE Isoconcentration Map for the sampling event conducted on May 8, 2017 is illustrated as Figure 5. The source area of gasoline impacted groundwater (concentrations of MTBE greater than 2.59 ppm) is approximately 60 feet long by 20 feet wide with the focal point of the plume located at the northeast corner of the tank hold.

### **3.6 Free-Phase Hydrocarbon Extent**

Free phase hydrocarbons (fph) have not been observed at this subject property

### **3.7 Horizontal Extent of Groundwater Contamination**

Results of the May 8, 2017 groundwater sampling events indicated that MW-3 contained concentrations of MTBE exceeding the ARBCA Groundwater Resource Protection (GRP) target levels. Analytical results also indicated that concentrations of Benzene, Toluene, Ethylbenzene, and Total Xylenes did not exceed the ARBCA GRPs in the groundwater samples collected. During the May 8, 2017 event MW-2 was inaccessible.

The horizontal extent of dissolved phase Benzene impact appears to be defined by wells MW-1, MW-5, and MW-9 to the west; MW-8 and MW-15 to the north; and MW-7 and MW-11 to the east. The plume is not completely defined to the south of MW-4. The MTBE Isoconcentration Map for the sampling event conducted on May 8, 2017 is included as Figure 5.

### **3.8 Vertical Extent of Groundwater Contamination**

There are currently no Type III deep wells installed on the subject property. The vertical extent of groundwater contamination is not defined.

### **3.9 Horizontal and Vertical Extent of Soil Contamination**

Based on previous assessment reports and all available historical data there are no concentrations of soil above the ARBCA SSTLs. Table 1 summarizes the available soil data for Benzene, Toluene, Ethylbenzene, Total Xylenes, and MTBE.

### **3.10 Project Personnel**

The Project Manager for this project was Wesley P. Henson a Professional Geologist with PM. The Professional Geologist reviewing the report and consulting on site activities was L. Gregory Stephenson (PG #742). The Cost Proposal and Work Plan were written by Wesley P. Henson; reviewed by L. Gregory Stephenson; and compiled, printed, and mailed by Marian Edmonson a staff scientist with PM. The report was written by Wesley P. Henson, the tables were updated and report compiled by Marian Edmonson, and the figures were created by Kyle Shinabarker of PM.

## **4.0 SUMMARY OF PREVIOUS CONDUCTED CORRECTIVE ACTIONS**

PM has been conducting 8-hour MEME events to supplement the approved RNA CAP submitted by SEMS in October 2006 and approved by ADEM in March 2007. To date, PM has conducted a total of 26 eight-hour MEME events and 18 groundwater monitoring events at this site. The Summary of MEME Event Data table is presented as Table 4 in Appendix A. The MEME table summarizes relevant data from each event such as date, duration, amount of hydrocarbons removed, amount of liquids removed, and designated extraction wells.

## **5.0 EXPOSURE ASSESSMENT**

This section describes background concentrations, identification of the potential exposure pathways, identification of potential receptors, and estimated levels of contamination for the potential receptors.

### **5.1 Background Contaminant Concentration**

Background contaminant concentrations in the groundwater were established by the contaminant concentrations from monitoring well MW-13, which is located on the west adjoining property across Lafayette Street. These concentrations were below detection limits for BTEX and MTBE since MW-13 was installed in 2004.

### **5.2 Identification of Potential Exposure Routes**

The purpose of this section is to evaluate risk by assessing toxicity and exposure through exposure analysis. Potential pathways for groundwater impacted by gasoline at the subject property include groundwater ingestion, soil leaching to groundwater, indoor

air inhalation, and outdoor air inhalation, migration via utility corridor, groundwater surface water interface, and direct contact pathway.

#### **5.2.1 Groundwater Ingestion**

No private or public water supply wells are known to exist within 1.000 feet of the subject property. Therefore this pathway is incomplete.

#### **5.2.2 Soil leaching to Groundwater**

The levels of contamination in the soils are below the ARBCA SSTLs; therefore, the soil leaching to groundwater pathway is incomplete.

#### **5.2.3 Indoor Air Inhalation**

##### Soils

The indoor air inhalation pathway was evaluated per ARBCA Guidance Documents for Tier I & Tier II exposure pathways. Soil concentrations did not exceed the indoor inhalation of vapors emissions (IIVE). Therefore, indoor inhalation from soil vapor for current and future use scenarios is not a concern and is not a complete pathway at the subject property.

##### Groundwater

The indoor air inhalation pathway was evaluated per the ARBCA Guidance Documents for Tier I exposure pathways. Groundwater concentrations did not exceed the groundwater indoor inhalation of vapor emissions (IIVE) criteria. Therefore, indoor inhalation from groundwater vapor for current and future use scenarios is not a concern and is not a complete pathway at the subject property.

#### **5.2.4 Outdoor Air Inhalation**

##### Soils

The outdoor air inhalation pathway was evaluated per ARBCA Guidance Documents for Tier I exposure pathways. Soil concentrations did not exceed the outdoor inhalation of vapor emissions (OIVE) criteria. The soil to ambient air pathway is not a concern for this subject property.

##### Groundwater

The outdoor air inhalation pathway was evaluated per ARBCA Guidance Documents for Tier I exposure pathways. Groundwater concentrations did not exceed the outdoor inhalation of vapor emissions (OIVE) criteria. The groundwater to ambient air pathway is not a concern for this subject property.

#### **5.2.5 Migration via Utility Corridor**

The utility corridors on the subject property are located on the south side of the subject property along Second Drive SW and the west side of the subject property along Lafayette Street. These utilities include water, gas, sewer, and telephone (Figure 2). Static groundwater levels are below depths that could intercept the trenching. Therefore, the potential migration pathway via utility corridor is not a concern at this subject property.

### **5.2.6 Groundwater to Surface Water Interface**

There are no known surface water bodies within 500 feet of the subject property. Drainage from rain events would flow to the east and south across the subject property to a drainage ditch/culvert along the north side of Second Drive SW. Due to the lack of surface water bodies in close proximity to the site this pathway is incomplete.

### **5.2.7 Direct Contact Pathway**

The most plausible exposure pathway at this subject property is to utility workers, construction workers, or environmental technicians, who may be in direct contact with the contaminated groundwater at the subject property. These pathways will only be present during utility repair, maintenance, and installation activities conducted in the vicinity of the subject property or during well installation and sampling activities.

## **5.3 Identification of Potential Receptors**

As discussed in Section 5.2 the potential receptor of this contamination is direct contact. Please see Appendix A, Tables 1 (soil) & 2 (groundwater) for historical analytical data and the ARBCA Tier II Site Specific Target Levels.

## **6.0 REMEDIATION BY NATURAL ATTENUATION WITH MOBILE ENHANCED MUTI-PHASE EXTRACTION EVENTS**

The following is a discussion of the proposed remedial method for the impacted groundwater at the subject site.

### **6.1 Site Characterization**

No prior releases of gasoline into the environment are known concerning the site. The volume of the release is unknown.

The subject site is located in the Opelika Plateau District of the Piedmont Physiographic Section. The altitude in the Opelika Plateau District ranges from 550 to 900 feet above mean sea level. The area is underlain by the Camp Hill Granite Gneiss. The Camp Hill Granite Gneiss consists of coarse to medium grained foliated granite and quartz diorite gneiss, locally biotite rich with thin amphibolite pods and lenses. The formation is highly fractured in some areas. The estimated thickness of the Camp Hill Granite Gneiss ranges from approximately 1,000 to 2,200 feet.

The city of Lafayette is located at an elevation of approximately 840 feet above mean sea level. Visual characterization of soil samples and drill cuttings indicate the site is underlain by sand, silt, and clay. Sand and clay with silt was generally encountered at depths ranging from five to 30 feet below ground surface (bgs). Sand was generally encountered below approximately 30 feet bgs, according to historical records.

During the most recent groundwater monitoring event on May 8, 2017, the depth to groundwater ranged from 32.80 to 37.14 feet below TOC. Data gathered during previous investigations at the subject property indicated groundwater flow at the subject property is generally to the northeast and east. Static water level readings and well

construction data are summarized in Appendix A Table 2. The groundwater gradient (i) as calculated during the ARBCA Evaluation was 0.1176. Additionally, during the Secondary Investigation a series of slug test were performed to determine the average hydraulic conductivity in the saturated zone. The hydraulic conductivity was recorded to be  $6.55 \times 10^{-4}$  cm/second. The calculated Darcy velocity in the ARBCA Evaluation was 2,429 cm/year.

Utilities surround the subject site boundaries and are mainly located in the right of ways along Lafayette Street and Second Drive. Refer to Section 2.5 for information on location of utilities.

## **6.2 Site Remediation Goals Based on ARBCA Evaluation Data**

Based on the findings of the 2005 ARBCA Tier I and II evaluation, it is recommended that additional remedial activities be instituted in order to reach the Site Specific Target Levels. Please see Appendix A, Tables 1 (soil) & 2 (groundwater) for historical analytical data and the ARBCA Tier II Site Specific Target Levels. Therefore, it is proposed that during each trimester of remediation three 8-hour MEME events with air sparge be conducted approximately one month apart to help speed the remediation process. Prior approval will be obtained from ADEM's Air Division prior to initiation of any MEME event.

## **6.3 Receptor Evaluation**

No private or public water supply wells were identified within a 1,000 ft radius of the site. Public water to the site is supplied by the City of Lafayette, which utilizes surface water as its primary source. A public water intake is not located within one mile of the site. Active water supply wells are not located within 1,000 feet of the site.

## **6.4 Evaluation of Plume and Proposed Remedial Goals**

Concentrations of MTBE are not below the ARBCA GRP Target Levels in groundwater monitoring well MW-3 at 4.19 ppm with a GRP of 2.59 ppm. During the most recent groundwater monitoring event the previously most contaminated monitoring well, MW-2, was inaccessible and could not be sampled. The source area of gasoline impacted groundwater (concentrations of MTBE greater than 2.59 ppm) is approximately 60 feet long by 20 feet wide with the focal point of the plume located at the northeast corner of the tank hold. The asymptotic levels of contaminants will be determined by the ADEM guidelines as defined in Rule 335-6-15.32 Alternative Corrective Action Limits (ACALs). The Tier II Risk Based Corrective Action Limits for groundwater at this site are included in Appendix A (Table 2) of this report.

## **6.5 Remediation Plan**

The addition of Mobile Enhanced Multi-phase Extraction (MEME) events with air sparge would remove a portion of the impacted water at the site while introducing oxygen into the subsurface to actively strip chemicals of concern during the event and allowing natural remediation to be enhanced during periods of inactivity at the site. Based on all available data, MEME events with air sparge will be the optimal remedial option at this

time. Although a UIC permit for air sparge will be required for this initiative, the new streamlined application/approval process is less costly and more efficient than the traditional UIC permit process.

Six two-inch air sparge wells will need to be installed to a terminal depth of 50 feet bgs and constructed with a two-foot section of 0.010" slotted screen. The surface completion of the air sparge wells will be 12" bolt-down manhole covers. Figure 6 shows the approximate locations of the proposed air sparge injection wells to be installed in close proximity to the problem wells MW-2, MW-3, and MW-4. Refer to Figure 7 for the typical air sparge recovery well diagram.

Monitoring wells MW-2, MW-3, and MW-4 will be over-drilled and converted into four-inch Type II recovery wells with terminal depths of 44 feet bgs. The new recovery wells will be constructed with 15 feet of 0.010" slotted screen, and completed at the surface with eight-inch bolt-down manhole covers. MEME events will focus extraction on new recovery wells MW-2R, MW-3R, and MW-4R while injecting air into the six new injection wells. If the groundwater concentrations in any planned extraction point decrease below the SSTLs, the MEME configuration may be altered to provide for the most effective use of the MEME event. Conversely, if the groundwater concentrations in any monitoring wells increases above the SSTLs, the MEME configuration may be altered to provide for the most effective use of the MEME event.

PM recommends three 24-hour MEME events with air sparge be scheduled during each trimester, approximately one month apart. The MEME events will be conducted with a typical MEME truck supplied by a vendor or a mobile dual-phase extraction (DPE) system equipped with air sparge that is already owned by PM. If the mobile DPE system is utilized there will be no waste water to haul away for disposal, because it is a treatment system as opposed to a MEME truck that stores water for later disposal at an additional cost. However, a NPDES permit will be required to facilitate the discharge of treated groundwater onsite. Effluent air treatment for both the MEME truck and the mobile DPE system will be provided in the form of either vapor phase carbon drums or air pollution control device (APCD) used by typical MEME vendors. The 24-hour events with the mobile DPE system will be manned by a two-man crew who will alternate shifts taking readings and monitoring operation of the system. The 24-hour events with a MEME vendor usually involves a one-man crew who is onsite for eight hours and the truck is monitored remotely for the remaining 16 hours of the event.

During development of the CAP implementation workplan a cost-benefit analysis will be conducted to determine which approach will be more cost efficient while expediting site closure.

## **6.6 Pilot Testing Activities**

Pilot testing would not be required as part of the MEME event with the air sparge approach.

## **7.0 GROUNDWATER MONITORING PROGRAM**

### **Monitoring Wells**

Groundwater monitoring would be conducted three times per year. During the first two monitoring events monitoring wells MW-1, MW-2, MW-3, MW-4, MW-7, MW-9, and MW-11 would be sampled. During the third monitoring event all wells (MW-1 through MW-16) would be sampled. A copy of the Health and Safety Plan is included in Appendix C.

### **Determination of Static Water Level/Free Product Thickness**

Static water level and free product thickness, if any, measurements will be recorded using an electronic interface probe, accurate to 0.01-inch, from each monitoring well prior to purging and sampling activities. To avoid the potential for cross contamination, the interface probe will be decontaminated by washing and rinsing between each use. All groundwater level measurements will be recorded within a 24-hour time period to avoid any temporal variations which may occur in groundwater flow systems. Measurements will be made from the top of the casing surveyed to a relative benchmark or feet above mean sea level. After measuring the static water level, sampling personnel will determine the total depth of the monitoring well to evaluate if excessive siltation has occurred within the well and to determine purge volumes.

### **Sampling Procedures**

**Sample Collection:** Groundwater samples will be collected by personnel who have thoroughly reviewed this monitoring program and are familiar with the sampling procedures. Care will be taken to avoid the potential for cross contamination between samples and to prevent loss of volatiles to the atmosphere. Groundwater samples will be collected using a new disposable bailer with new nylon cord. Prior to sample collection, wells will be purged until a minimum of three well casing volumes are evacuated.

Groundwater sampling will proceed from the least contaminated well to the most contaminated well. Equipment decontamination fluids and purged groundwater evacuated from each monitoring well will be transported to a disposal facility after the groundwater sampling event.

**Sample Preservation:** Groundwater samples will be collected in the designated size and type of containers required for specific parameters. Sample containers will be filled in such a manner as not to lose any preservative chemicals from the containers.

**Sample Shipment:** The samples will be stored in an ice-packed cooler and transported, with appropriate trip blanks and chain-of-custody forms, to the laboratory for chemical analysis within the appropriate holding times.

**Chain-of-Custody:** Chain-of-custody procedures will be used to allow for the tracing of possession and handling of samples from the time of collection to the completion of laboratory analysis. A chain-of-custody form will accompany each set of samples transported to the laboratory.

**Detection Limits:** Laboratory analysis of all test parameters listed as part of the groundwater monitoring plan will meet or exceed the site specific target levels.

**Quality Assurance/Quality Control:**

Field QA/QC: A trip blank of distilled or deionized water will accompany each shipment cooler of samples for volatile organic analysis to the laboratory to evaluate the potential for cross contamination during shipment or storage of samples. The trip blank will be analyzed for VOCs using USEPA approved methods.

Laboratory QA/QC: At least one duplicate sample from a monitoring well within the contaminant plume will be submitted to the laboratory for analysis of VOCs. This will be done to evaluate sampling and analysis reproducibility. The sample duplicate will be labeled Duplicate. Sampling personnel will record the actual well number of the duplicate in their field notes. The duplicate location and sample results will be reported in each monitoring report.

**Well Maintenance**

The condition of each monitoring well will be evaluated for integrity during each monitoring event. All monitoring wells at the subject site will be clearly labeled, securely capped, locked, and covered with protective casings. As of the most recent site visit, 15 of the 16 monitoring wells at this site require new well pads and manhole covers. Three of these monitoring wells will receive new well pads and manhole covers when MW-2, MW-3, and MW-4 are over-drilled and converted into recovery wells MW-2R, MW-3R, and MW-4R. Therefore, 12 well pad and manhole cover replacements are needed.

**8.0 CONCLUSIONS AND RECOMMENDATIONS**

This Corrective Action Evaluation has summarized previous investigations, presented an exposure assessment, and evaluated existing data for the site.

- Soil samples collected during assessment activities did not record exceedances of their respective ARBCA GRP target levels or SSTL.
- Results of the May 8, 2017 groundwater monitoring event indicate the following:
  - MTBE exceeds the approved SSTLs in MW-3 at 4.18 ppm (duplicate = 4.19 ppm) with a GRP of 2.59 ppm.
  - The MTBE concentration in MW-3 decreased from 13.1 ppm (January 2017) to 4.18 ppm (duplicate = 4.19 ppm) (May 2017). The MTBE concentration in MW-4 decreased from 0.714 ppm (January 2017) to 0.344 ppm (May 2017).
  - Analytical results also indicated that concentrations of Benzene, Toluene, Ethylbenzene, and Total Xylenes did not exceed the ARBCA GRPs.
- The most plausible exposure pathway at this subject property is to utility workers, construction workers, or environmental technicians, who may be in direct contact with the contaminated groundwater at the subject property. These pathways will only be present during utility repair, maintenance, and installation activities conducted in the vicinity of the subject property or during well installation and sampling activities.

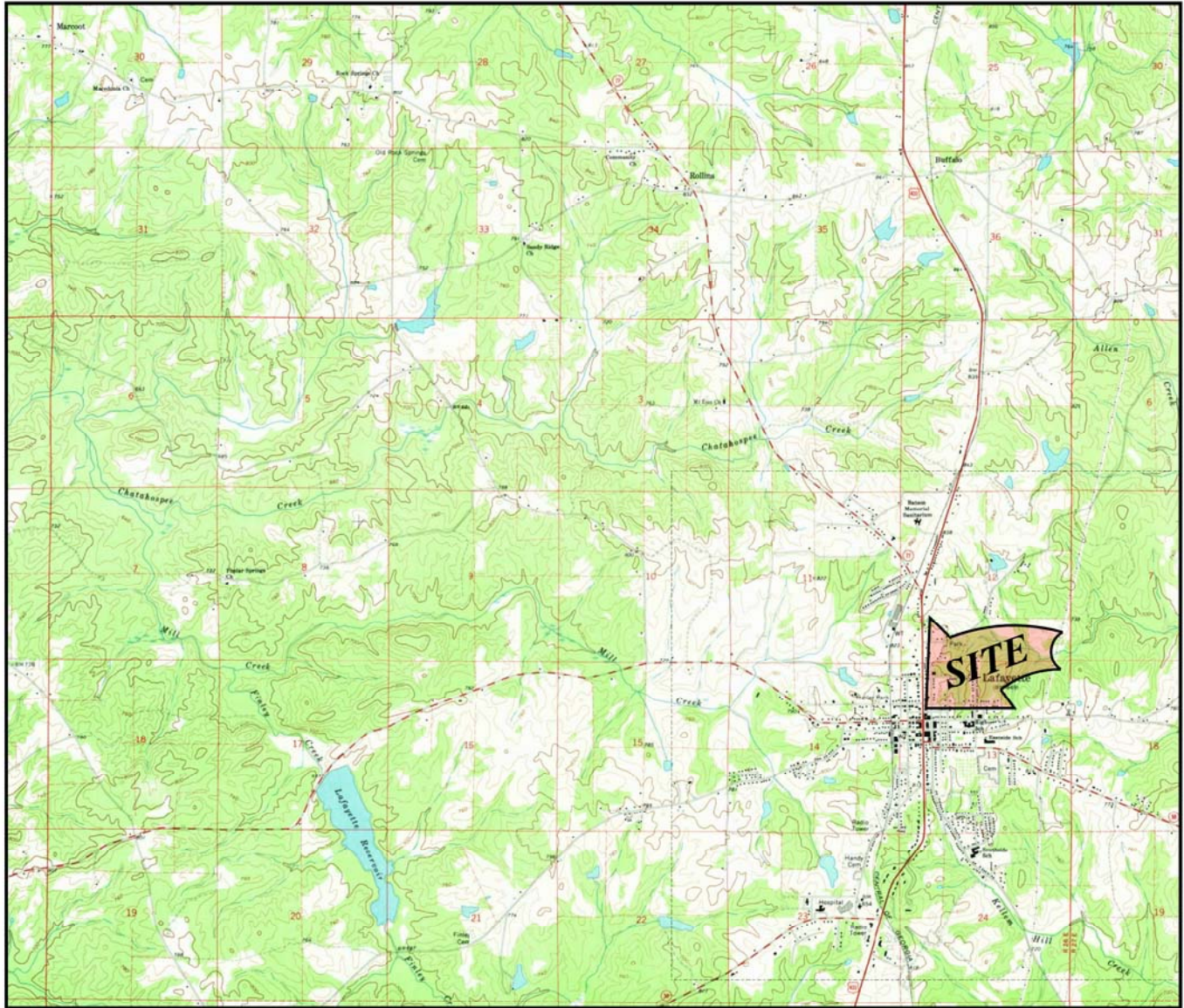


***Revised Corrective Action Plan for Former MAPCO #5605 (DFM #183)  
Located at 132 South Lafayette Street, Lafayette, Chambers County, Alabama  
Facility I.D. No. 15420-017-003301; UST Incident No UST94-02-01***

PM recommends MEME Events with air sparge as the most cost effective and timely remedial option available at the site. PM will wait for a concurrence of opinion from ADEM before preparing cost proposals for recommended future work that includes the following:

- Prepare workplan and cost proposal for an Air Sparge UIC Permit and NPDES discharge permit
- Prepare workplan and cost proposal for the installation of six air sparge injection wells, three recovery wells (over-drill MW-2, MW-3, MW-4), and the replacement of 12 well pads and manhole covers.
- Prepare workplan and cost proposals for one year of triannual MEME with Air Sparge events

## Figures



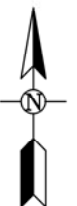
## CHAMBERS COUNTY

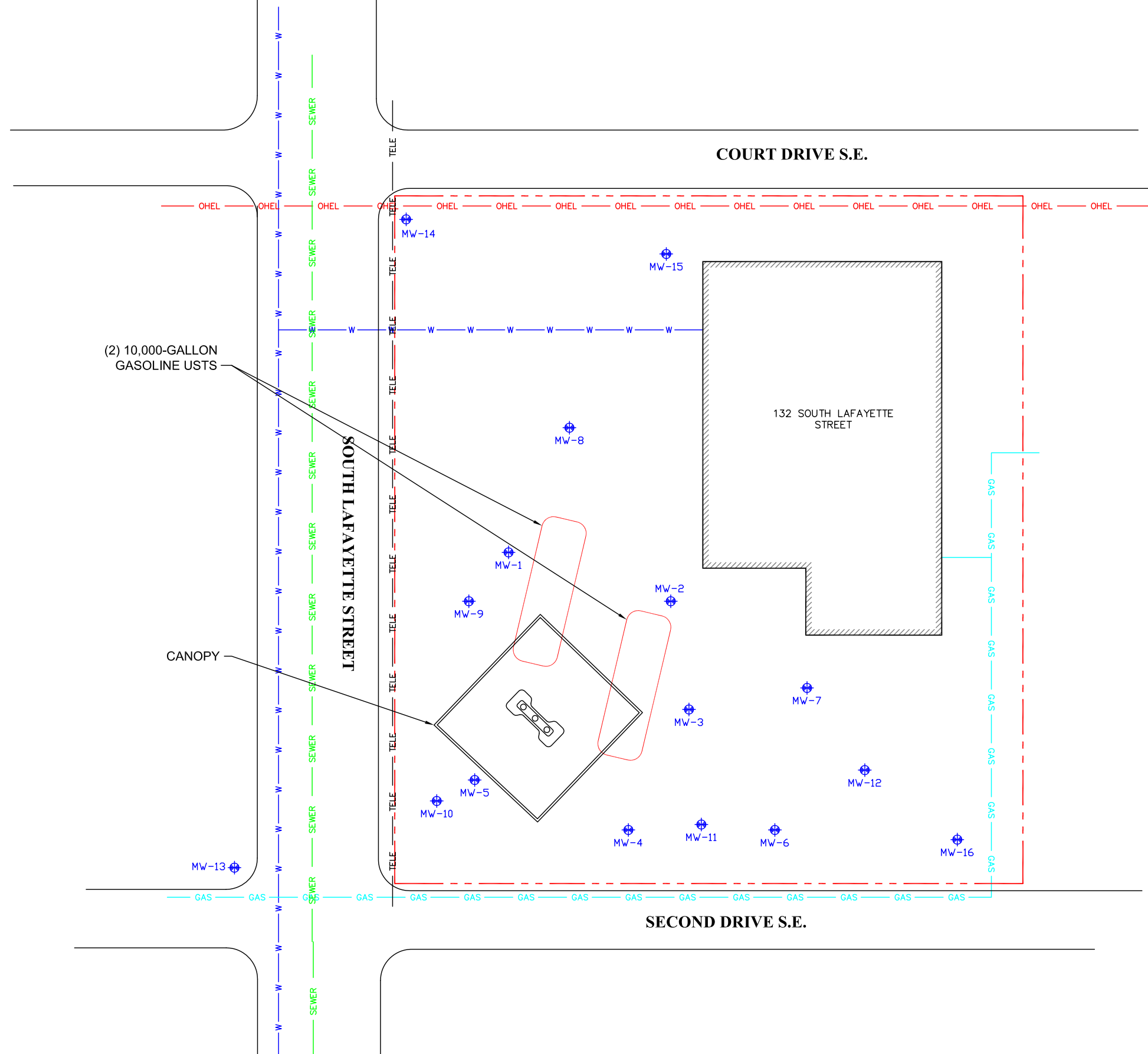


ALABAMA COUNTY LOCATIONS



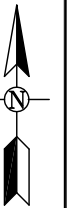
FIGURE 1  
PROPERTY VICINITY MAP  
USGS, 7.5 MINUTE SERIES  
LAFAYETTE, AL QUADRANGLE, 1971. PHOTO REVISED 1973.






**LEGEND:**

- |                |  |
|----------------|--|
| ---            | SUBJECT PROPERTY                           |
| W              | WATER                                      |
| GAS            | GAS  |
| SEWER          | SEWER (UNDETERMINED SANITARY AND/OR STORM) |
| OHEL           | OVERHEAD ELECTRIC LINE                     |
| TELE           | BURIED PHONE LINE                          |
| FUEL DISPENSER | FUEL DISPENSER                             |
| UST            | UNDERGROUND STORAGE TANK                   |
| MW             | MONITORING WELL LOCATIONS                  |



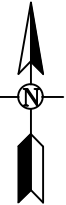
 <b>Environmental &amp; Engineering Services</b>		
<b>FIGURE 2</b> GENERALIZED DIAGRAM OF THE SUBJECT PROPERTY AND ADJOINING PROPERTIES		
PROJ: MAPCO 5605 132 SOUTH LAFAYETTE STREET LAFAYETTE, AL		
THIS IS NOT A LEGAL SURVEY	DRN BY: KK/TS/CS/ES/KS	DATE: 5/17/2017
VERIFY SCALE	CHKD BY: SE/WH	SCALE: 1" = 20'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		
FILE NAME: 70-800-1-036F02R00		





**LEGEND:**

- SUBJECT PROPERTY  
--- 500' RADIUS



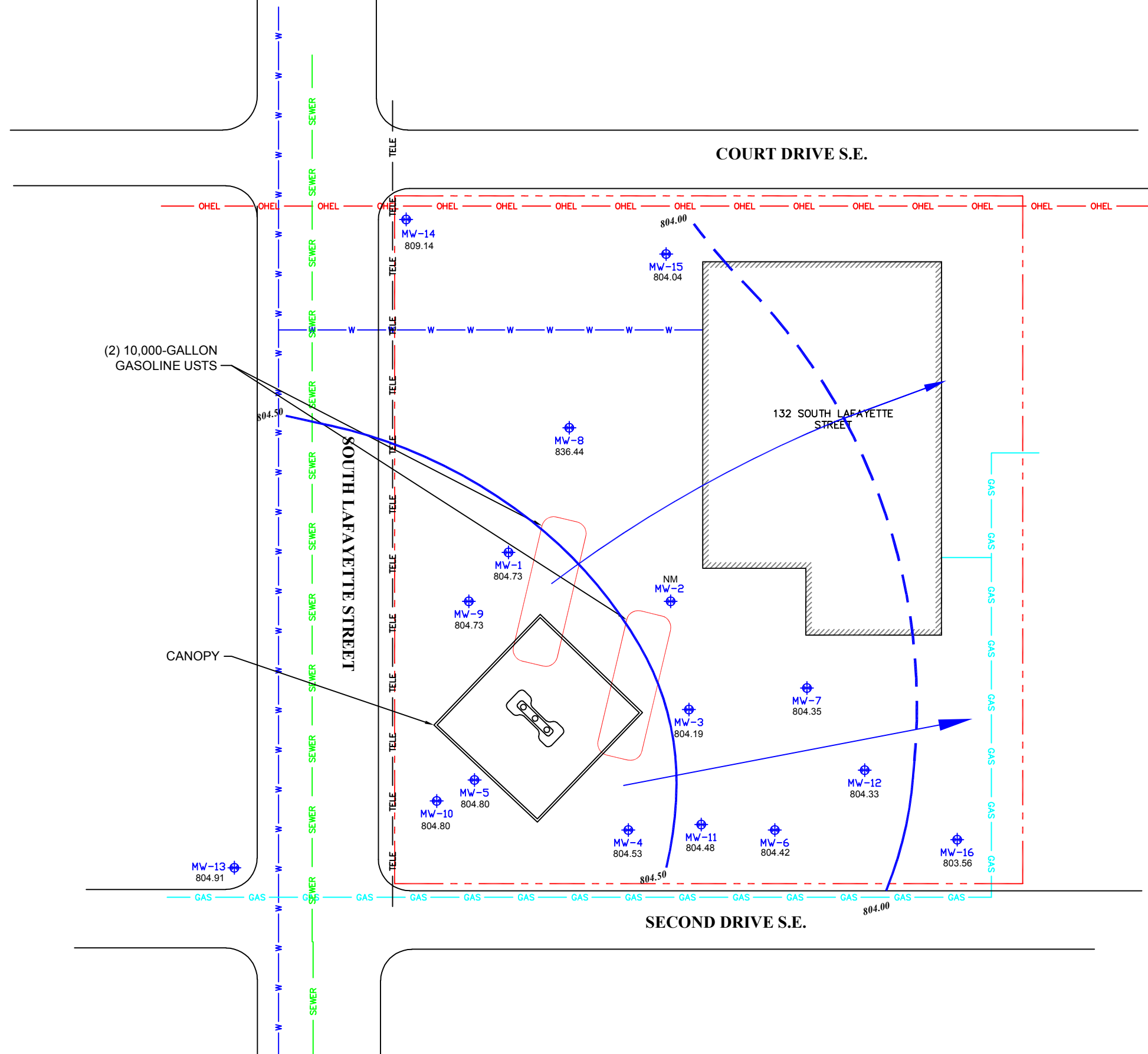
Environmental  
& Engineering  
Services

**FIGURE 3**

GENERALIZED DIAGRAM OF THE SUBJECT  
PROPERTY WITH 500' RADIUS

PROJ:		MAPCO 5605 132 SOUTH LAFAYETTE STREET LAFAYETTE, AL	
THIS IS NOT A LEGAL SURVEY		DRN BY: KK/TS/CS/ES/KS/TL	DATE: 5/17/2017
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IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.			






**LEGEND:**

- SUBJECT PROPERTY
- W WATER
- GAS GAS
- SEWER SEWER (UNDETERMINED SANITARY AND/OR STORM)
- OHEL OVERHEAD ELECTRIC LINE
- TELE BURIED PHONE LINE
- FUEL DISPENSER
- UST UNDERGROUND STORAGE TANK
- MONITORING WELL LOCATIONS
- GROUNDWATER CONTOUR
- GROUNDWATER FLOW
- GROUNDWATER ELEVATION
- NH DATA POINT NOT HONORED

NOTES: MW-8 WELL SCREENED IN A SMALLER INTERVAL. DATA POINT NOT CONTOURED

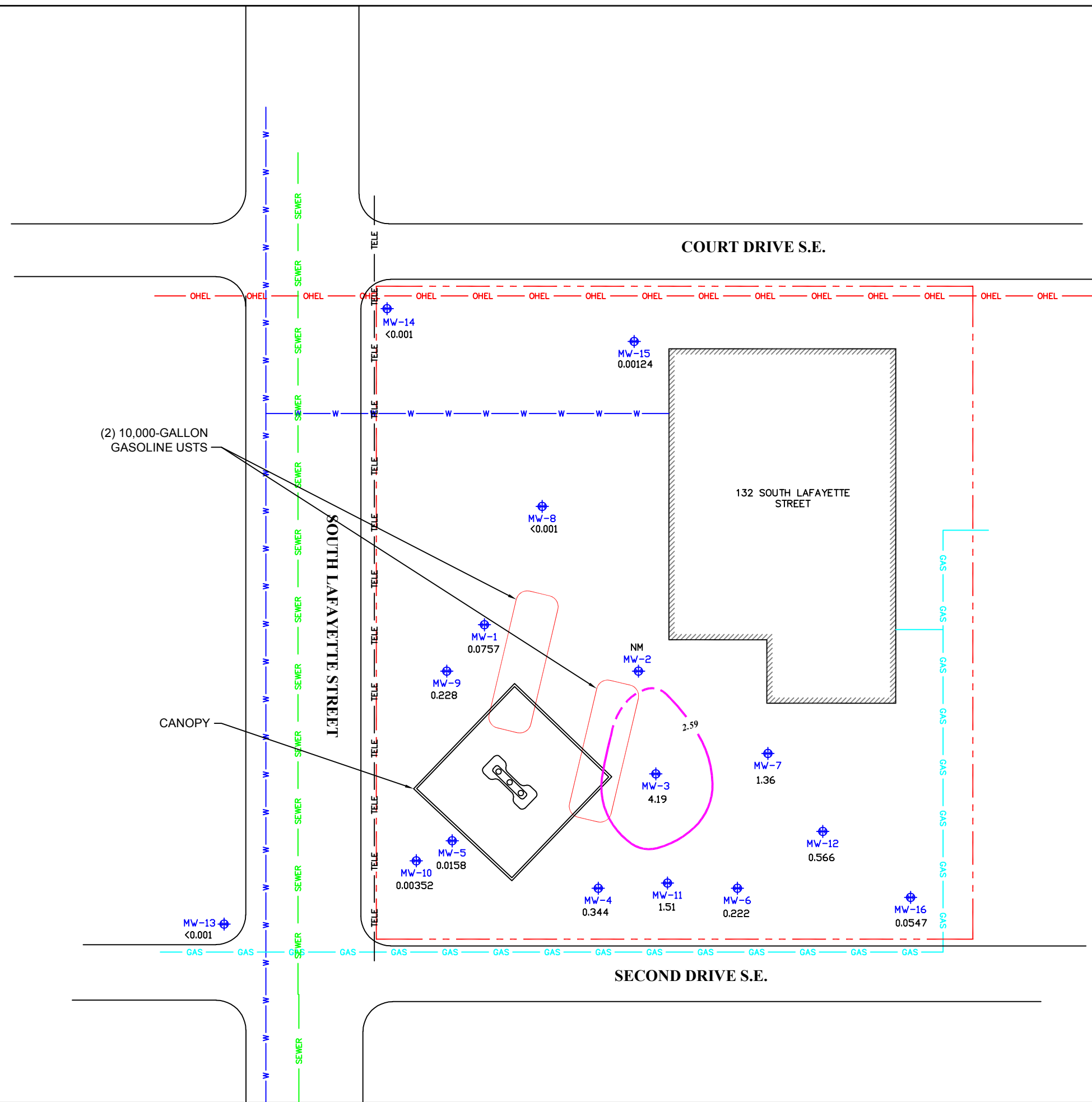


Environmental  
& Engineering  
Services

**FIGURE 4**  
POTENTIOMETRIC SURFACE MAP  
(5/8/2017)

PROJ: MAPCO 5605  
132 SOUTH LAFAYETTE STREET  
LAFAYETTE, AL

THIS IS NOT A LEGAL SURVEY	DRN BY: KK/TS/CS/KS/ES/CS	DATE: 5/19/2017
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0 IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	FILE NAME: 70-800-1-038F05R00	



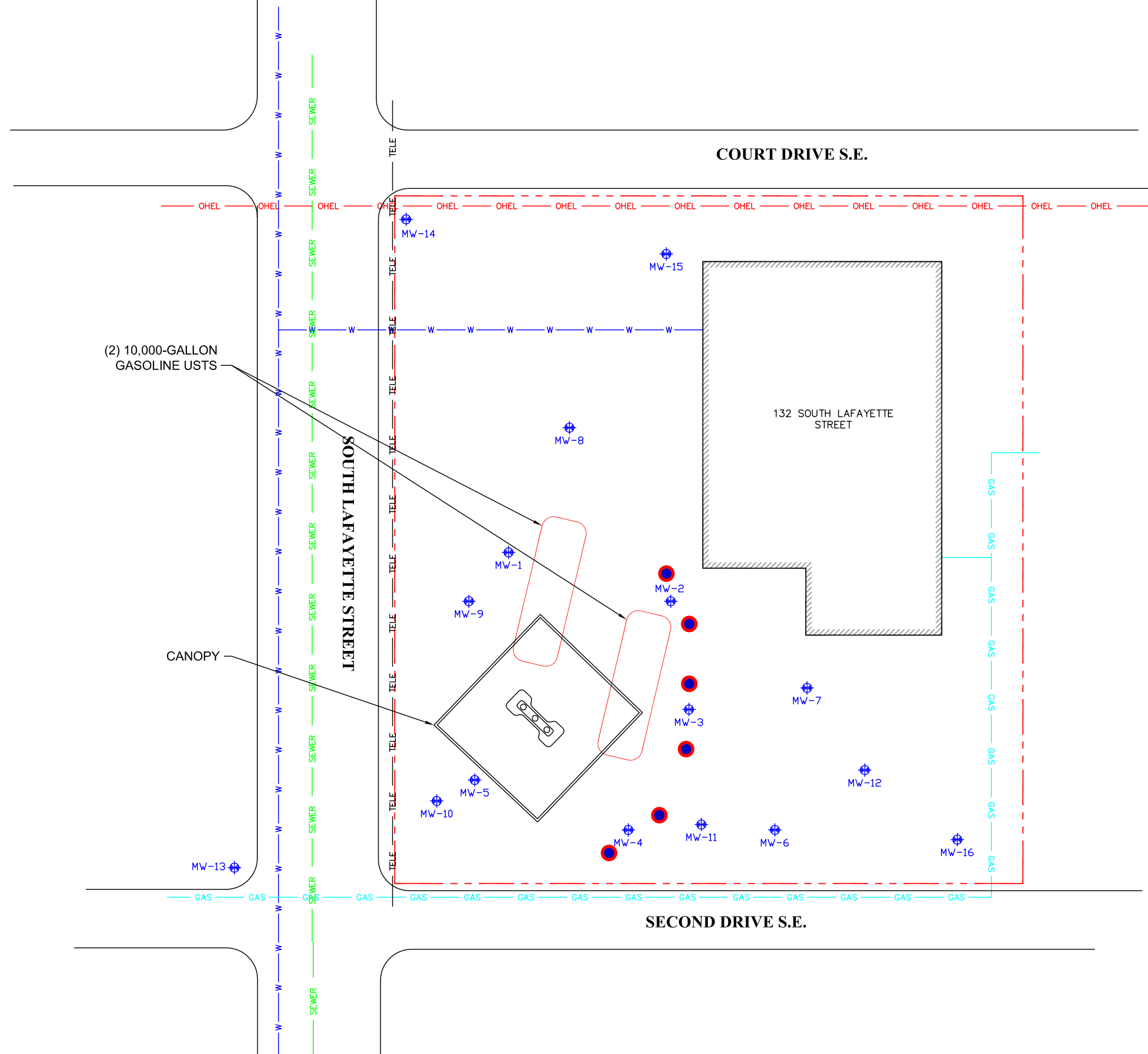
- LEGEND:**
- SUBJECT PROPERTY
  - WATER
  - GAS
  - SEWER (UNDETERMINED SANITARY AND/OR STORM)
  - OVERHEAD ELECTRIC LINE
  - BURIED PHONE LINE
  - FUEL DISPENSER
  - UST
  - MONITORING WELL LOCATIONS
  - GROUNDWATER CONTOUR
  - GROUNDWATER ELEVATION
  - DATA POINT NOT HONORED
  - DATA POINT NOT SAMPLED



**FIGURE 5**  
GROUNDWATER MTBE  
ISOCONCENTRATION MAP  
(5/8/2017)

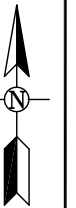
PROJ: MAPCO 5605  
132 SOUTH LAFAYETTE STREET  
LAFAYETTE, AL


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IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	FILE NAME: 70-800-1-038F14R00	



**LEGEND:**

- SUBJECT PROPERTY
- W WATER
- GAS GAS
- SEWER SEWER (UNDETERMINED SANITARY AND/OR STORM)
- OHEL OVERHEAD ELECTRIC LINE
- TELE BURIED PHONE LINE
- FUEL DISPENSER
- UST UNDERGROUND STORAGE TANK
- MONITORING WELL LOCATIONS
- PROPOSED AIR SPARGE WELL





**Environmental  
& Engineering  
Services**

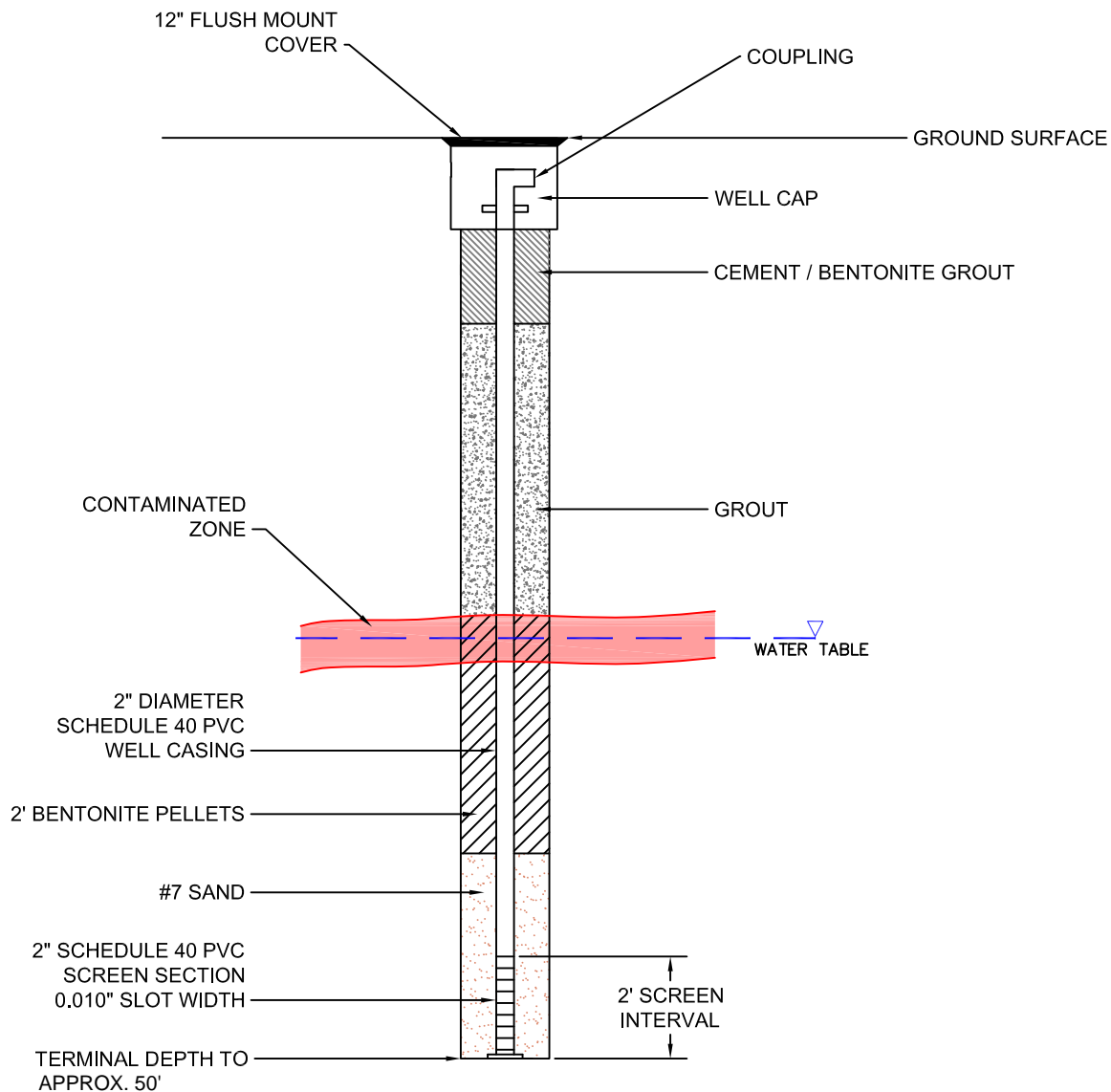
**FIGURE 6**  
**PROPOSED AIR SPARGE WELL LAYOUT**

PROJ: MAPCO 5605  
132 SOUTH LAFAYETTE STREET  
LAFAYETTE, AL

<b>THIS IS NOT A LEGAL SURVEY</b>	DRN BY: KK/TS/CS/ES/KS	DATE: 10/12/2016
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0 20'	FILE NAME: 70-800-1-036F02R00	

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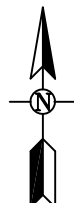




NOTE:  
AIR SPARGE WELL DESIGN WILL VARY BY  
LOCATION AND DEPTH TO WATER

**LEGEND:**

	SAND
	CEMENT / BENTONITE GROUT
	BENTONITE PELLETS
	GROUT



**PM**  
ENVIRONMENTAL

**Environmental  
& Engineering  
Services**

**FIGURE 7**  
TYPICAL AIR SPARGE WELL

PROJ:

MAPCO 5605  
132 SOUTH LAFAYETTE STREET  
LAFAYETTE, AL

THIS IS NOT A LEGAL  
SURVEY

DRN BY:  
KK/MW/KK/KS

DATE: 5/17/2017

VERIFY SCALE

CHKD BY:

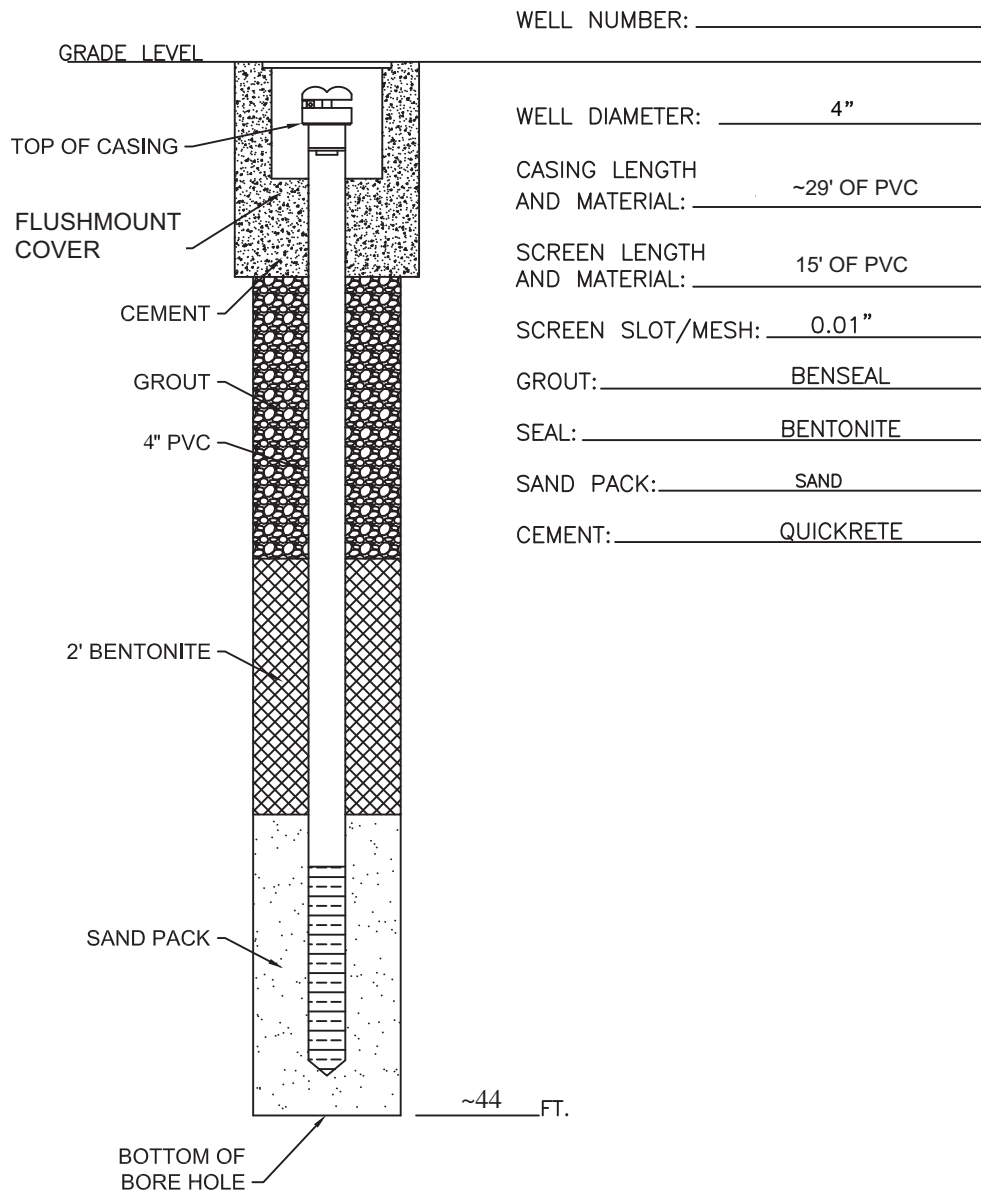
WH

SCALE: NTS

0 IF NOT 1" ON THIS  
SHEET, ADJUST  
SCALES ACCORDINGLY.

FILE NAME:  
70-800-I-040

## TYPICAL EXTRACTION WELL INSTALLATION DIAGRAM



**PM**  
ENVIRONMENTAL

**Environmental  
& Engineering  
Services**

**FIGURE 8**

**TYPICAL RECOVERY WELL INSTALLATION  
DIAGRAM**

PROJ: MAPCO 5605  
132 SOUTH LAFAYETTE STREET  
LAFAYETTE, AL

**THIS IS NOT A LEGAL  
SURVEY**

DRN BY: MW

DATE: 5/17/2017

VERIFY SCALE

CHKD BY: WH

SCALE: NTS

0 10 NTS

IF NOT 1" ON THIS  
SHEET, ADJUST  
SCALES ACCORDINGLY.

FILE NAME: 70-800-I-040

## Appendix A

**TABLE 1**  
**SUMMARY OF SOIL ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

SAMPLE ID	DEPTH	DATE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	MTBE	NAPHTHALENE
			Concentrations in mg/Kg or ppm					
SB-1	14-16	11/16/2004	0.0011	ND	ND	0.013	0.01	NS
	29-31		0.0043	0.017	0.00052	0.064	0.355	NS
SB-2	19-21	11/15/2004	0.0012	0.0083	ND	0.0325	0.006	NS
	29-31		0.0011	ND	ND	ND	0.0560	NS
SB-3	9-10	11/15/2004	0.0014	ND	ND	ND	ND	NS
	29-31		0.0014	0.005	ND	0.020	0.015	NS
MW-13	24-26	11/17/2004	0.00100	ND	ND	ND	ND	NS
	29-31		0.0011	ND	ND	ND	ND	NS
MW-14	19-21	11/16/2004	0.0010	ND	ND	ND	ND	NS
	29-31		0.0010	ND	ND	0.0104	ND	NS
MW-15	14-16	11/16/2004	0.0011	ND	ND	0.0054	ND	NS
	29-31		0.0011	ND	ND	ND	ND	NS
MW-16	19-21	11/16/2004	ND	ND	ND	ND	ND	NS
	29-31		0.00510	ND	ND	0.019	0.009	NS
ARBCA SSTLs			68.3	3180	1480	1860	61.3	---

NOTES: 1. ID - Identification; mg/kg - milligrams per kilogram; ppm - parts per million

2. ARBCA SSTLs - Alabama Risk Based Corrective Action Site Specific Target Levels

3. Bolded and italicized values indicate potential exceedances of the ISLs where the detection limit is greater than the ISL.

4. ND= Non Detect; NS= Not Sampled

5. The data above was collected by others and presented as found on ADEM's E-File system

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water	Free Product Thickness	Potentiometric Surface Elevation	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
	feet below TOC	Feet	feet above msl	Concentrations in mg/L							
<b>MW-1</b>	Date of Installation			Sept. 1994				Size of Well			
	TOC Elevation in feet above msl:			839.73				Screened Interval in feet bgs:			
								2"			
09/22/94	---	---	---	0.110	0.026	0.003	0.140	0.279	---	---	---
12/18/95	---	---	---	0.500	0.008	ND	0.200	0.708	---	---	---
07/31/96	34.98	---	804.85	0.130	ND	0.014	0.057	0.201	---	---	---
11/23/04	36.15	---	803.68	0.0108	0.0077	NS	NS	0.0185	0.173	---	NS
10/12/06	35.44	---	804.39	0.230	NS	NS	0.021	0.251	0.220	---	0.0063
08/07/07	36.85	---	802.98	0.035	NS	NS	NS	0.035	0.900	---	NS
05/20/08	38.19	---	801.64	NS	NS	NS	NS	NS	0.900	---	NS
08/28/08	38.19	---	801.64	NS	NS	NS	NS	NS	NS	NS	NS
02/25/09	37.78	ND	802.05	NS	NS	NS	NS	NS	NS	NS	NS
02/23/10	32.49	ND	807.34	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	31.87	ND	807.96	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	34.89	ND	804.94	<0.050	<0.050	<0.050	<0.150	<0.30	2.230	---	NS
12/13/11	35.63	ND	804.20	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	36.46	ND	803.37	<0.001	<0.005	<0.005	<0.005	---	1.50	---	NS
04/19/12	35.97	ND	803.86	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	36.00	ND	803.83	<0.001	<0.005	<0.005	<0.005	<0.016	2.60	---	0.00434
01/22/13	37.67	ND	802.16	<0.001	<0.005	<0.005	<0.005	<0.016	0.79	---	NS
04/09/13	36.55	ND	803.28	<0.001	<0.005	<0.005	<0.005	<0.016	2.2	---	NS
09/04/13	34.83	ND	804.90	<0.001	<0.005	<0.005	<0.005	<0.016	1.2	---	NS
11/12/13	35.23	ND	804.50	<0.005	<0.005	<0.005	<0.005	<0.02	1.9	---	NS
07/22/14	34.09	ND	805.74	<0.001	<0.005	<0.005	<0.005	<0.016	1.5	---	NS
10/21/14	34.54	ND	805.29	<0.01	<0.05	<0.05	<0.05	<0.16	2.0	---	NS
09/21/15	34.89	ND	804.94	<0.001	<0.005	<0.001	<0.003	<0.010	1.29	---	NS
01/25/16	34.16	ND	805.67	<0.025	<0.125	<0.025	<0.075	<0.25	0.699	---	NS
05/03/16	32.33	ND	807.50	<0.001	<0.005	<0.001	<0.003	<0.010	0.0312	---	NS
09/12/16	33.38	ND	806.45	<0.001	<0.005	<0.001	<0.003	<0.010	0.280	---	NS
01/24/17	35.58	ND	804.25	NS	NS	NS	NS	NS	NS	NS	NS
05/08/17	35.10	ND	804.73	<0.001	<0.001	<0.001	<0.003	<0.006	0.0757	<0.005	NS
<b>ARBCA SSTLs</b>				<b>1.46</b>	<b>131</b>	<b>169</b>	<b>113</b>	<b>---</b>	<b>2.59</b>	<b>---</b>	<b>---</b>

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-2</b>				Date of Installation Sept. 1994			Size of Well 2"				
TOC Elevation in feet above msl:				838.97			Screened Interval in feet bgs: 29.0-44.0				
09/22/94	---	---	---	0.470	0.860	2.300	15.000	18.630	---	---	---
12/18/95	---	---	---	3.600	11.000	2.200	13.000	29.800	---	---	---
07/31/96	34.31	---	804.66	2.060	7.800	1.850	9.800	21.510	---	---	---
11/23/04	35.38	---	803.59	0.152	0.0486	0.0175	0.111	0.3291	2.650	---	ND
10/12/06	34.68	---	804.29	0.074	0.043	0.024	0.240	0.381	1.700	---	0.018
08/07/07	35.09	---	803.88	0.33	0.0099	0.0033	0.047	0.390	1.500	---	0.022
05/20/08	37.34	---	801.63	0.009	ND	ND	0.008	0.017	2.400	---	0.007
08/28/08	37.32	---	801.65	0.010	0.009	ND	0.030	0.049	2.700	---	0.037
02/25/09	37.09	---	801.88	ND	ND	ND	ND	ND	0.110	---	NS
02/23/10	31.87	---	807.10	0.014	<0.005	<0.005	<0.005	0.014	1.700	---	NS
05/19/10	Car Parked Over Well			NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	34.20	---	804.77	<0.050	0.0114	<0.050	<0.150	0.0114	2.84	---	NS
12/13/11	35.98	---	802.99	<0.050	<0.050	<0.050	<0.150	<0.30	4.81	---	NS
03/15/12	35.76	ND	803.21	0.018	<0.005	<0.005	<0.005	0.018	3.1	---	NS
04/19/12	35.26	ND	803.71	0.017	<0.005	<0.005	<0.005	0.017	3.9	---	NS
08/22/12	35.21	ND	803.76	0.014	<0.005	<0.005	<0.005	0.014	3.1	---	<0.001
01/22/13	37.00	ND	801.97	0.014	<0.005	<0.005	<0.005	0.014	6.9	---	NS
	Duplicate			0.011	<0.005	<0.005	<0.005	0.011	6.6	---	NS
04/09/13	36.00	ND	802.97	<0.01	<0.05	<0.05	<0.05	<0.16	4.3	---	NS
	Duplicate			0.0095	<0.005	<0.005	<0.005	0.0095	3.4	---	NS
09/04/13	34.15	ND	804.82	0.013	<0.005	<0.005	<0.005	0.013	8.1	---	NS
11/12/13	34.62	ND	804.35	0.022	<0.005	<0.005	<0.005	0.022	9.1	---	NS
07/22/14	33.50	ND	805.47	0.0042	<0.005	<0.005	<0.005	0.0042	17.0	---	NS
10/21/14	33.84	ND	805.13	<0.05	<0.25	<0.25	<0.25	<0.8	13.0	---	NS
	Duplicate			0.009	<0.005	<0.005	<0.005	0.009	13.0	---	NS
09/21/15	34.22	ND	804.75	0.00965	<0.005	<0.001	<0.003	0.00965	11.9	---	NS
01/25/16	33.25	ND	805.72	<0.1	<0.5	<0.1	<0.3	<1.0	2.89	---	NS
05/03/16	31.80	ND	807.17	0.00405	<0.005	<0.001	<0.003	0.00405	14.6	---	NS
09/12/16	32.69	ND	806.28	0.00424	<0.005	<0.001	0.00396	0.00820	5.72	---	NS
	Duplicate			0.00395	<0.005	<0.001	<0.003	0.00395	6.04	---	NS
01/24/17	34.88	ND	804.09	<0.020	<0.020	<0.020	<0.060	<0.120	14.1	---	NS
	Duplicate			<0.010	<0.010	<0.010	<0.010	<0.010	13.3	---	NS
05/08/17	NM	ND	838.97	Inaccessible - covered by roll-off container							
ARBCA SSTLs				0.65	129	91	175	---	2.59	---	---

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water	Free Product Thickness	Potentiometric Surface Elevation	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead		
	feet below TOC	Feet	feet above msl	Concentrations in mg/L									
MW-3	Date of Installation					Sept. 1994		Size of Well					2"
	TOC Elevation in feet above msl:					838.77		Screened Interval in feet bgs:					29.0-44.0
09/22/94	---	---	---	2.300	0.710	0.260	4.200	7.470	---	---	---		
12/18/95	---	---	---	2.000	1.200	0.330	3.700	7.230	---	---	---		
07/31/96	34.05	---	804.72	1.320	1.640	0.075	2.170	5.205	---	---	---		
11/23/04	35.26	---	803.51	0.0729	0.0204	0.105	0.0471	0.2454	1.230	---	ND		
10/12/06	34.48	---	804.29	0.058	0.024	0.150	0.030	0.262	1.600	---	0.057		
08/07/07	34.42	---	804.35	0.012	<0.050	0.180	0.066	0.258	4.200	---	0.087		
05/20/08	37.17	---	801.60	0.023	ND	0.086	0.016	0.125	2.800	---	0.012		
08/28/08	37.15	---	801.62	0.018	0.091	ND	0.030	0.139	3.900	---	0.061		
02/25/09	36.89	---	801.88	0.032	ND	0.066	ND	0.098	3.300	---	NS		
02/23/10	31.61	---	807.16	0.015	0.0053	<0.005	<0.005	0.0203	3.800	---	NS		
05/19/10	30.32	---	808.45	0.017	0.0060	0.0065	<0.005	0.0295	1.800	---	NS		
05/23/11	34.00	---	804.77	0.157	<0.10	<0.10	<0.30	0.1570	7.520	---	NS		
12/13/11	35.76	---	803.01	0.041	<0.100	<0.100	<0.300	0.0410	14.000	---	NS		
03/15/12	35.55	ND	803.22	0.066	<0.005	<0.005	<0.005	0.066	11.0	---	NS		
04/19/12	35.11	ND	803.66	0.055	<0.005	<0.005	<0.005	0.055	17.0	---	NS		
08/22/12	35.01	ND	803.76	0.021	<0.005	<0.005	<0.005	0.021	5.7	---	1.86		
	Duplicate			<0.05	<0.25	<0.25	<0.25	<0.05	23	---	0.00141		
01/22/13	36.80	ND	801.97	<0.1	<0.5	<0.5	<0.5	<1.6	27	---	NS		
04/09/13	35.89	ND	802.88	<0.02	<0.1	<0.1	<0.1	<0.32	32	---	NS		
09/04/13	33.92	ND	804.85	0.089	<0.025	<0.025	<0.025	0.089	20	---	NS		
	Duplicate			0.1	<0.005	<0.005	<0.005	0.1	16	---	NS		
11/12/13	34.41	ND	804.36	0.12	0.0057	<0.005	<0.005	0.126	40	---	NS		
	Duplicate			0.11	0.0058	<0.005	<0.005	0.116	47	---	NS		
07/22/14	33.29	ND	805.48	0.0098	<0.005	<0.005	<0.005	0.0098	34	---	NS		
	Duplicate			0.008	<0.005	<0.005	<0.005	0.008	37	---	NS		
10/21/14	33.61	ND	805.16	<0.01	<0.05	<0.05	<0.05	<0.16	37	---	NS		
09/21/15	34.03	ND	804.74	0.0437	0.0124	0.00406	0.0287	0.0889	23.7	---	NS		
	Duplicate			0.0461	<0.125	<0.025	<0.075	0.0461	25.5	---	NS		
01/25/16	33.51	ND	805.26	<0.2	1.0	<0.2	<0.6	1.0	4.7	---	NS		
	Duplicate			0.00332	<0.005	<0.001	<0.003	0.00332	4.85	---	NS		
05/03/16	31.56	ND	807.21	0.00297	<0.005	<0.001	<0.003	0.00297	5.29	---	NS		
	Duplicate			0.00297	<0.005	<0.001	<0.003	0.00297	5.51	---	NS		
09/12/16	32.51	ND	806.26	0.0134	0.0176	0.0523	<1.5	0.08330	8.25	---	NS		
01/24/17	34.64	ND	804.13	<0.020	<0.020	<0.020	<0.060	<0.120	13.1	---	NS		
05/08/17	34.28	ND	804.49	0.00368	<0.001	<0.001	<0.003	0.00368	4.18	<0.005	NS		
	Duplicate			0.00377	<0.001	<0.001	<0.003	0.00377	4.19	<0.005	NS		
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---		

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-4</b>				Date of Installation Sept. 1994			Size of Well 2"				
TOC Elevation in feet above msl:				838.83			Screened Interval in feet bgs: 28.0-43.0				
09/22/94	---	---	---	1.200	0.790	0.100	3.400	5.490	---	---	---
12/18/95	---	---	---	2.300	1.400	0.270	1.300	5.270	---	---	---
07/31/96	33.98	---	804.85	1.100	0.487	0.114	0.608	2.309	---	---	---
11/23/04	38.26	---	800.57	0.0125	0.0193	0.0015	0.0213	0.0546	0.256	---	ND
10/12/06	34.48	---	804.35	0.012	0.0085	0.0018	0.0087	0.031	0.420	---	0.032
08/07/07	35.92	---	802.91	0.023	0.0064	0.0059	0.0100	0.045	0.270	---	0.009
05/20/08	37.25	---	801.58	0.014	ND	0.00088	0.0036	0.018	0.130	---	ND
08/28/08	37.23	---	801.60	0.012	0.00086	ND	0.0050	0.018	0.170	---	0.008
02/22/09	36.93	---	801.90	NS	NS	NS	NS	NS	NS	NS	NS
02/23/10	31.57	ND	807.26	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	30.98	ND	807.85	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	34.03	ND	804.80	0.00042	<0.002	<0.002	<0.002	0.00042	1.330	---	NS
05/20/08	37.25	---	801.58	0.014	ND	0.00088	0.0036	0.018	0.13	---	ND
08/28/08	37.23	---	801.60	0.012	0.00086	ND	0.0050	0.018	0.17	---	0.008
05/23/11	34.03	ND	804.80	0.00042	<0.002	<0.002	<0.002	0.00042	1.33	---	NS
12/13/11	35.71	ND	803.12	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	35.61	ND	803.22	<0.005	<0.005	<0.005	<0.005	---	1.70	---	NS
04/19/12	35.18	ND	803.65	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	35.04	ND	803.79	<0.001	<0.005	<0.005	<0.005	<0.016	2.1	---	<0.001
01/22/13	36.84	ND	801.99	<0.001	<0.005	<0.005	<0.005	<0.016	2.5	---	NS
04/09/13	35.88	ND	802.95	<0.01	<0.05	<0.05	<0.05	<0.16	2.7	---	NS
09/04/13	33.95	ND	804.88	<0.001	<0.005	<0.005	<0.005	<0.016	2.6	---	NS
11/12/13	34.40	ND	804.43	<0.005	<0.005	<0.005	<0.005	<0.02	2.6	---	NS
07/22/14	33.33	ND	805.50	<0.001	<0.005	<0.005	<0.005	<0.016	2.6	---	NS
10/21/14	33.62	ND	805.21	<0.01	<0.05	<0.05	<0.05	<0.16	4.0	---	NS
09/21/15	34.05	ND	804.78	<0.001	<0.005	<0.001	<0.003	<0.010	2.79	---	NS
01/25/16	33.37	ND	805.46	<0.050	<0.25	<0.050	<0.150	<0.5	1.97	---	NS
05/03/16	31.54	ND	807.29	<0.001	<0.005	<0.001	<0.003	<0.010	1.26	---	NS
09/12/16	32.09	ND	806.74	<0.001	<0.005	<0.001	0.00376	0.00376	3.08	---	NS
01/24/17	34.74	ND	804.09	<0.001	<0.001	<0.001	<0.003	<0.006	0.714	---	NS
05/08/17	34.30	ND	804.53	<0.001	<0.001	<0.001	<0.003	<0.006	0.344	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---



**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-5</b>				Date of Installation Nov. 1995			Size of Well 2"				
TOC Elevation in feet above msl:				839.49			Screened Interval in feet bgs: 28.0-38.0				
09/22/94	---	---	---	---	---	---	---	---	---	---	---
12/18/95	---	---	---	2.300	0.600	0.022	0.680	3.602	---	---	---
07/31/96	34.38	---	805.11	1.100	0.053	0.147	0.328	1.628	---	---	---
11/23/04	35.75	---	803.74	0.0527	0.123	0.0025	0.0244	0.203	0.096	---	ND
10/12/06	34.95	---	804.54	0.073	0.017	0.0018	0.024	0.116	0.980	---	0.140
08/07/07	36.20	---	803.29	0.012	ND	ND	0.0033	0.015	1.800	---	0.120
05/20/08	37.12	---	802.37	NS	NS	NS	NS	NS	NS	NS	NS
08/28/08	37.49	---	802.00	NS	NS	NS	NS	NS	NS	NS	NS
02/25/09	37.43	---	802.06	NS	NS	NS	NS	NS	NS	NS	NS
02/23/10	31.73	ND	807.76	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	31.03	ND	808.46	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	34.49	ND	805.00	<0.050	<0.050	<0.050	<0.150	<0.300	2.39	---	NS
12/13/11	35.11	ND	804.38	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	36.11	ND	803.38	<0.005	0.0059	<0.005	0.0074	0.0133	2.5	---	NS
04/19/12	35.61	ND	803.88	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	35.54	ND	803.95	<0.001	<0.005	<0.005	<0.005	---	2.0	---	0.005
01/22/13	37.19	ND	802.30	Insufficient Water to Obtain Sample							
04/09/13	36.25	ND	803.24	<0.001	<0.005	<0.005	<0.005	<0.016	0.2	---	NS
09/04/13	34.36	ND	805.13	<0.001	<0.005	<0.005	<0.005	<0.016	0.4	---	NS
11/12/13	34.82	ND	804.67	<0.005	<0.005	<0.005	<0.005	<0.02	1.2	---	NS
07/22/14	33.62	ND	805.87	<0.001	<0.005	<0.005	<0.005	<0.016	0.64	---	NS
10/21/14	34.10	ND	805.39	<0.005	<0.025	<0.025	<0.025	<0.08	0.89	---	NS
09/21/15	34.47	ND	805.02	<0.001	<0.005	<0.001	<0.003	<0.010	0.248	---	NS
01/25/16	33.52	ND	805.97	<0.001	<0.005	<0.001	<0.003	<0.010	0.040	---	NS
05/03/16	31.85	ND	807.64	<0.001	<0.005	<0.001	<0.003	<0.010	0.0402	---	NS
09/12/16	32.94	ND	806.55	<0.001	<0.005	<0.001	<0.003	<0.010	0.00235	---	NS
01/24/17	35.22	ND	804.27	NS	NS	NS	NS	NS	NS	NS	NS
05/08/17	34.69	ND	804.80	<0.001	<0.001	<0.001	<0.003	<0.006	0.0158	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-6</b>				Date of Installation Nov. 1995			Size of Well 2"				
TOC Elevation in feet above msl:				837.56			Screened Interval in feet bgs: 29.0-44.0				
09/22/94	---	---	---	---	---	---	---	---	---	---	---
12/18/95	---	---	---	2.000	0.380	0.230	6.800	9.41	---	---	---
07/31/96	32.86	---	804.70	1.260	0.214	0.581	7.220	9.275	---	---	---
11/23/04	34.86	---	802.70	0.168	0.0127	0.0842	0.0101	0.275	0.108	---	ND
10/12/06	33.33	---	804.23	0.093	0.013	0.0097	0.0062	0.122	0.160	---	0.0078
08/07/07	34.75	---	802.81	0.120	0.024	0.0150	0.0068	0.166	0.180	---	0.0094
05/20/08	35.97	---	801.59	0.019	ND	ND	0.0028	0.022	0.180	---	ND
08/28/08	35.99	---	801.57	0.018	ND	ND	ND	0.018	0.250	---	0.0210
02/25/09	35.74	---	801.82	NS	NS	NS	NS	NS	NS	NS	NS
02/23/10	30.39	ND	807.17	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	29.18	ND	808.38	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	32.84	ND	804.72	0.0081	<0.002	<0.002	<0.006	0.0081	0.138	---	NT
05/20/08	35.97	---	801.59	0.019	ND	ND	0.0028	0.022	0.180	---	ND
08/28/08	35.99	---	801.57	0.018	ND	ND	ND	0.018	0.250	---	0.0210
05/23/11	32.84	ND	804.72	0.0081	<0.002	<0.002	<0.006	0.0081	0.138	---	NS
12/13/11	33.69	ND	803.87	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	34.39	ND	803.17	<0.005	<0.005	<0.005	<0.005	---	0.19	---	NS
04/19/12	34.00	ND	803.56	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	33.89	ND	803.67	0.0033	<0.005	<0.005	<0.005	0.0033	0.26	---	<0.001
01/22/13	35.67	ND	801.89	0.0028	<0.005	<0.005	<0.005	0.0028	0.25	---	NS
04/09/13	34.69	ND	802.87	0.0019	<0.005	<0.005	<0.005	0.0019	0.31	---	NS
09/04/13	32.76	ND	804.80	0.001	<0.005	<0.005	<0.005	0.001	0.33	---	NS
11/12/13	33.29	ND	804.27	NS	NS	NS	NS	NS	NS	NS	NS
07/22/14	32.11	ND	805.45	<0.001	<0.005	<0.005	<0.005	<0.016	0.31	---	NS
10/21/14	32.48	ND	805.08	<0.001	<0.005	<0.005	<0.005	<0.016	0.20	---	NS
09/21/15	32.90	ND	804.66	NS	NS	NS	NS	NS	NS	NS	NS
01/25/16	32.21	ND	805.35	NS	NS	NS	NS	NS	NS	NS	NS
05/03/16	30.38	ND	807.18	NS	NS	NS	NS	NS	NS	NS	NS
09/12/16	32.15	ND	805.41	NS	NS	NS	NS	NS	NS	NS	NS
01/24/17	33.60	ND	803.96	<0.001	<0.001	<0.001	<0.001	<0.006	0.251	---	NS
05/08/17	33.14	ND	804.42	<0.001	<0.001	<0.001	<0.003	<0.006	0.222	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-7</b>				Date of Installation Nov. 1995			Size of Well 2"				
TOC Elevation in feet above msl:				837.92			Screened Interval in feet bgs: 28.0-43.0				
09/22/94	---	---	---	---	---	---	---	---	---	---	---
12/18/95	---	---	---	1.400	0.700	0.140	2.600	4.840	---	---	---
07/31/96	33.49	---	804.64	1.170	0.370	0.075	1.970	3.585	---	---	---
11/23/04	34.72	---	803.41	0.0124	0.0032	ND	0.0075	0.023	0.447	---	ND
10/12/06	33.94	---	804.19	0.0062	ND	ND	ND	0.0062	0.180	---	ND
08/07/07	35.32	---	802.81	0.0063	ND	0.0017	0.0027	0.0107	0.150	---	ND
05/20/08	36.54	---	801.59	0.0019	ND	ND	ND	0.0019	0.220	---	ND
08/28/08	36.51	---	801.62	0.0017	0.00059	ND	0.0017	0.0040	0.300	---	0.120
02/25/09	36.32	---	801.81	NS	NS	NS	NS	NS	NS	NS	NS
02/23/10	Well covered by vehicle			NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	Could not remove well cover			NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	33.43	ND	804.70	<0.010	<0.010	<0.010	<0.030	<0.10	0.4830	---	NS
12/13/11	33.87	ND	804.26	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	34.94	ND	803.19	<0.005	<0.005	<0.005	<0.005	---	1.3	---	NS
04/19/12	34.50	ND	803.63	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	34.46	ND	803.67	0.0021	<0.005	<0.005	<0.005	0.0021	1.1	---	<0.001
01/22/13	36.24	ND	801.89	0.0029	<0.005	<0.005	<0.005	0.0029	1.6	---	NS
04/09/13	35.04	ND	802.88	0.0039	<0.005	<0.005	<0.005	0.0039	2.7	---	NS
09/04/13	33.16	ND	804.76	0.0022	<0.005	<0.005	<0.005	0.0022	1.5	---	NS
11/12/13	33.72	ND	804.20	<0.005	<0.005	<0.005	<0.005	<0.02	2.5	---	NS
07/22/14	32.49	ND	805.43	0.0022	<0.005	<0.005	<0.005	0.0022	2.2	---	NS
10/21/14	32.92	ND	805.00	<0.005	<0.025	<0.025	<0.025	<0.08	1.4	---	NS
09/21/15	33.31	ND	804.61	0.00141	<0.005	<0.001	<0.003	0.00141	1.94	---	NS
01/25/16	32.22	ND	805.70	0.00152	<0.005	<0.001	<0.003	0.00152	2.97	---	NS
05/03/16	30.80	ND	807.12	<0.001	<0.005	<0.001	<0.003	<0.010	2.02	---	NS
09/12/16	31.82	ND	806.10	<0.001	<0.005	<0.001	<0.003	<0.010	1.08	---	NS
01/24/17	33.97	ND	803.95	0.00197	<0.001	<0.001	<0.003	0.00197	1.97	---	NS
05/08/17	33.57	ND	804.35	<0.001	<0.001	<0.001	<0.003	<0.006	1.36	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-8</b>				Date of Installation July 1996			Size of Well 2"				
TOC Elevation in feet above msl:				839.60			Screened Interval in feet bgs: 2.5-4.0				
09/22/94	---	---	---	---	---	---	---	---	---	---	---
12/18/95	---	---	---	---	---	---	---	---	---	---	---
07/31/96	3.51	---	804.49	0.396	0.011	0.120	0.331	0.858	---	---	---
11/23/04	3.62	---	803.40	ND	ND	ND	ND	ND	0.0209	---	ND
10/12/06	3.54	---	804.20	0.140	ND	ND	0.017	0.157	0.082	---	0.0064
08/07/07	3.67	---	802.83	0.110	ND	ND	0.0087	0.119	0.089	---	ND
05/20/08	3.80	---	801.60	NS	NS	NS	NS	---	NS	NS	NS
08/28/08	3.79	---	801.65	0.0011	ND	ND	ND	0.001	0.019	---	0.0078
02/25/09	3.76	---	801.92	NS	NS	NS	NS	---	NS	NS	NS
02/23/10	3.21	ND	807.41	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	3.12	ND	808.39	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	0.00	ND	839.60	<0.001	<0.001	<0.001	<0.003	<0.006	<0.001	---	NS
12/13/11	0.00	ND	839.60	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	3.50	ND	836.17	NS	NS	NS	NS	NS	NS	NS	NS
04/19/12	3.73	ND	835.87	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	0.50	ND	839.10	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	0.125
01/22/13	1.77	ND	837.83	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
04/09/13	3.71	ND	835.89	Insufficient Water to Obtain Sample							
09/03/13	3.19	ND	836.41	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
11/12/13	1.57	ND	838.03	NS	NS	NS	NS	NS	NS	NS	NS
07/22/14	3.60	ND	836.00	<0.001	<0.005	<0.005	<0.005	<0.016	0.0059	---	NS
10/21/14	3.76	ND	835.84	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
09/21/15	well dry			NS	NS	NS	NS	NS	NS	NS	NS
01/25/16	3.14	ND	836.46	NS	NS	NS	NS	NS	NS	NS	NS
05/03/16	3.02	ND	836.58	NS	NS	NS	NS	NS	NS	NS	NS
09/12/16	3.49	ND	836.11	NS	NS	NS	NS	NS	NS	NS	NS
01/24/17	3.53	ND	836.07	NS	NS	NS	NS	NS	NS	NS	NS
05/08/17	3.16	ND	836.44	<0.001	<0.001	<0.001	<0.003	<0.006	<0.001	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---

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**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-9</b>				Date of Installation July 1996			Size of Well 2"				
TOC Elevation in feet above msl:				839.67			Screened Interval in feet bgs: 25.0-40.0				
09/22/94	---	---	---	---	---	---	---	---	---	---	---
12/18/95	---	---	---	---	---	---	---	---	---	---	---
07/31/96	34.74	---	804.93	0.412	0.007	0.070	0.199	0.688	---	---	---
11/23/04	35.98	---	803.69	0.0922	0.166	0.0023	0.0398	0.3003	0.212	---	ND
10/12/06	35.24	---	804.43	0.190	ND	0.0033	0.010	0.203	0.500	---	0.043
08/07/07	36.68	---	802.99	0.011	0.0056	0.0052	0.0076	0.029	0.420	---	0.110
05/20/08	37.99	---	801.68	NS	NS	NS	NS	---	NS	NS	NS
08/28/08	38.02	---	801.65	0.0045	ND	ND	ND	0.0045	1.100	---	ND
02/25/09	37.59	---	802.08	NS	NS	NS	NS	---	NS	NS	NS
02/23/10	32.14	ND	807.53	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	31.34	ND	808.33	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	34.72	ND	804.95	<0.10	<0.10	<0.10	<0.30	<0.60	8.24	---	NS
12/13/11	36.52	ND	803.15	<0.100	<0.100	<0.100	<0.300	<0.600	5.38	---	NS
03/15/12	36.39	ND	803.28	<0.005	<0.005	<0.005	<0.005	---	4.4	---	NS
04/19/12	35.86	ND	803.81	<0.001	<0.005	<0.005	<0.005	---	2.9	---	NS
08/22/12	35.78	ND	803.89	<0.001	<0.001	<0.005	<0.005	<0.016	2.9	---	0.00493
01/22/13	37.48	ND	802.19	<0.001	<0.005	<0.005	<0.005	<0.016	1.1	---	NS
04/09/13	36.44	ND	803.23	<0.001	<0.005	<0.005	<0.005	<0.016	1.6	---	NS
09/04/13	34.62	ND	805.05	<0.001	<0.005	<0.005	<0.005	<0.016	2.5	---	NS
11/12/13	35.06	ND	804.61	<0.005	<0.005	<0.005	<0.005	<0.02	4.9	---	NS
07/22/14	33.89	ND	805.78	<0.001	<0.005	<0.005	<0.005	<0.016	1.5	---	NS
10/21/14	34.37	ND	805.30	<0.001	<0.005	<0.005	<0.005	<0.016	3.2	---	NS
09/21/15	34.70	ND	804.97	<0.001	<0.005	<0.001	<0.003	<0.010	1.61	---	NS
01/25/16	33.92	ND	805.75	<0.001	<0.005	<0.001	<0.003	<0.010	0.388	---	NS
05/03/16	32.17	ND	807.50	<0.001	<0.005	<0.001	<0.003	<0.010	0.0705	---	NS
09/12/16	33.19	ND	806.48	<0.001	<0.005	<0.001	<0.003	<0.010	0.445	---	NS
01/24/17	35.42	ND	804.25	NS	NS	NS	NS	NS	NS	NS	NS
05/08/17	34.94	ND	804.73	<0.001	<0.001	<0.001	<0.003	<0.006	0.2280	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---

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**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-10</b>				Date of Installation July 1996			Size of Well 2"				
TOC Elevation in feet above msl:				839.57			Screened Interval in feet bgs: 25.0-40.0				
09/22/94	---	---	---	---	---	---	---	---	---	---	---
12/18/95	---	---	---	---	---	---	---	---	---	---	---
07/31/96	34.49	---	805.08	0.116	0.007	0.063	0.108	0.294	---	---	---
11/23/04	35.71	---	803.86	0.104	0.242	0.0028	0.0401	0.389	0.188	---	ND
10/12/06	35.04	---	804.53	0.051	ND	ND	0.1400	0.191	0.200	---	0.031
08/07/07	36.52	---	803.05	0.0014	ND	ND	0.0024	0.0038	0.820	---	0.036
05/20/08	37.94	---	801.63	0.0012	ND	ND	ND	0.0012	3.000	---	0.250
08/28/08	37.91	---	801.66	NS	NS	NS	NS	---	NS	NS	NS
02/25/09	37.47	---	802.10	ND	ND	ND	ND	---	6.300	---	NS
02/23/10	31.73	ND	807.84	<0.005	<0.005	<0.005	<0.005	<0.02	1.800	---	NS
05/19/10	30.73	ND	808.84	<0.005	<0.005	<0.005	<0.005	<0.02	2.000	---	NS
05/23/11	34.58	ND	804.99	<0.010	<0.010	<0.010	<0.030	<0.060	0.695	---	NS
12/13/11	36.43	ND	803.14	<0.010	<0.010	<0.010	<0.030	<0.060	0.863	---	NS
03/15/12	36.19	ND	803.38	<0.005	<0.005	<0.005	<0.005	---	1.0	---	NS
04/19/12	35.69	ND	803.88	<0.001	<0.005	<0.005	<0.005	---	1.2	---	NS
08/22/12	35.62	ND	803.95	<0.001	<0.005	<0.005	<0.005	<0.016	0.74	---	0.00801
01/22/13	37.39	ND	802.18	<0.001	<0.005	<0.005	<0.005	<0.016	0.19	---	NS
04/09/13	36.29	ND	803.28	<0.001	<0.005	<0.005	<0.005	<0.016	0.16	---	NS
09/04/13	34.45	ND	805.12	<0.001	<0.005	<0.005	<0.005	<0.016	0.36	---	NS
11/12/13	34.89	ND	804.68	<0.005	<0.005	<0.005	<0.005	<0.02	0.24	---	NS
07/22/14	33.69	ND	805.88	<0.001	<0.005	<0.005	<0.005	<0.016	0.05	---	NS
10/21/14	34.18	ND	805.39	<0.001	<0.005	<0.005	<0.005	<0.016	0.019	---	NS
09/21/15	34.55	ND	805.02	NS	NS	NS	NS	NS	NS	NS	NS
05/03/16	31.92	ND	807.65	NS	NS	NS	NS	NS	NS	NS	NS
09/12/16	32.85	ND	806.72	NS	NS	NS	NS	NS	NS	NS	NS
01/24/17	35.28	ND	804.29	NS	NS	NS	NS	NS	NS	NS	NS
05/08/17	34.77	ND	804.80	<0.001	<0.001	<0.001	<0.003	<0.006	0.00352	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-11</b>				Date of Installation July 1996			Size of Well 2"				
TOC Elevation in feet above msl:				838.38			Screened Interval in feet bgs: 25.0-40.0				
09/22/94	---	---	---	---	---	---	---	---	---	---	---
12/18/95	---	---	---	---	---	---	---	---	---	---	---
07/31/96	33.71	---	804.67	0.974	0.078	1.900	2.790	5.742	---	---	---
11/23/04	36.25	---	802.13	0.0292	0.0046	0.0017	0.0079	0.0434	0.314	---	ND
10/12/06	34.07	---	804.31	0.0095	ND	ND	0.0051	0.0146	0.610	---	0.019
08/07/07	35.51	---	802.87	0.0045	ND	0.0027	0.0063	0.0135	0.480	---	0.045
05/20/08	36.78	---	801.60	0.0057	ND	0.0012	0.0034	0.0103	0.420	---	ND
08/28/08	36.79	---	801.59	0.0094	ND	ND	ND	0.0094	0.640	---	0.160
02/25/09	36.51	---	801.87	NS	NS	NS	NS	---	NS	NS	NS
02/23/10	31.18	ND	807.20	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	30.59	ND	807.79	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	33.62	ND	804.76	<0.010	<0.010	<0.010	<0.030	<0.060	0.639	---	NS
12/13/11	35.76	ND	802.62	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	35.15	ND	803.23	<0.005	<0.005	<0.005	<0.005	---	0.72	---	NS
04/19/12	34.71	ND	803.67	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	34.62	ND	803.76	<0.001	<0.005	<0.005	<0.005	<0.016	0.93	---	0.00152
01/22/13	36.42	ND	801.96	<0.001	<0.005	<0.005	<0.005	<0.016	0.85	---	NS
04/09/13	35.45	ND	802.93	<0.001	<0.005	<0.005	<0.005	<0.016	0.9	---	NS
09/04/13	33.51	ND	804.87	<0.005	<0.025	<0.025	<0.025	<0.08	0.61	---	NS
11/12/13	34.01	ND	804.37	<0.005	<0.005	<0.005	<0.005	<0.02	0.94	---	NS
07/22/14	32.84	ND	805.54	<0.001	<0.005	<0.005	<0.005	<0.016	1.1	---	NS
10/21/14	33.21	ND	805.17	<0.001	<0.005	<0.005	<0.005	<0.016	1.1	---	NS
09/21/15	33.65	ND	804.73	<0.001	<0.005	<0.001	<0.003	<0.010	1.42	---	NS
01/25/16	33.13	ND	805.25	<0.050	<0.25	<0.050	<0.15	<0.5	1.36	---	NS
05/03/16	31.14	ND	807.24	<0.001	<0.005	<0.001	<0.003	<0.010	1.00	---	NS
09/12/16	32.18	ND	806.20	<0.001	<0.005	<0.001	<0.003	<0.010	0.728	---	NS
01/24/17	34.34	ND	804.04	<0.001	<0.001	<0.001	<0.003	<0.006	1.60	---	NS
05/08/17	33.90	ND	804.48	<0.001	<0.001	<0.001	<0.003	<0.006	1.51	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---



**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-12</b>	Date of Installation			July 1996			Size of Well				
	TOC Elevation in feet above msl:			837.49			2"				
							Screened Interval in feet bgs: 25.0-40.0				
09/22/94	---	---	---	---	---	---	---	---	---	---	---
12/18/95	---	---	---	---	---	---	---	---	---	---	---
07/31/96	32.88	---	804.61	1.430	0.142	1.990	2.960	6.522	---	---	---
11/23/04	34.10	---	803.39	0.107	0.0082	0.0036	0.0205	0.1393	0.202	---	ND
10/12/06	33.34	---	804.15	0.040	ND	0.0015	0.012	0.0535	0.280	---	0.0093
08/07/07	34.71	---	802.78	0.170	ND	0.0047	0.012	0.1867	0.360	---	0.0073
05/20/08	35.83	---	801.66	0.0072	ND	0.00059	0.0044	0.0122	0.320	---	ND
08/28/08	35.91	---	801.58	0.010	0.0028	ND	0.0100	0.0225	0.350	---	0.0250
02/25/09	35.74	---	801.75	NS	NS	NS	NS	NS	NS	NS	NS
02/23/10	30.38	ND	807.11	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	29.12	ND	808.37	0.011	<0.005	<0.005	<0.005	0.011	0.310	---	NS
05/23/11	32.84	ND	804.65	<0.005	<0.005	<0.005	<0.015	<0.030	0.303	---	NS
12/13/11	34.11	ND	803.38	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	34.37	ND	803.12	<0.005	<0.005	<0.005	<0.005	---	0.44	---	NS
04/19/12	33.91	ND	803.58	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	33.89	ND	803.60	0.0012	<0.005	<0.005	<0.005	0.0012	0.46	---	<0.001
01/22/13	35.71	ND	801.78	<0.001	<0.005	<0.005	<0.005	<0.016	0.4	---	NS
04/09/13	34.65	ND	802.84	<0.005	<0.025	<0.025	<0.025	<0.08	0.47	---	NS
09/04/13	32.75	ND	804.74	<0.005	<0.025	<0.025	<0.025	<0.08	0.80	---	NS
11/12/13	33.33	ND	804.16	<0.005	<0.005	<0.005	<0.005	<0.02	0.51	---	NS
07/22/14	32.10	ND	805.39	0.0014	<0.005	<0.005	<0.005	0.0014	0.61	---	NS
10/21/14	32.51	ND	804.98	<0.001	<0.005	<0.005	<0.005	<0.016	0.47	---	NS
09/21/15	32.91	ND	804.58	NS	NS	NS	NS	NS	NS	NS	NS
01/25/16	32.21	ND	805.28	NS	NS	NS	NS	NS	NS	NS	NS
05/03/16	30.39	ND	807.10	NS	NS	NS	NS	NS	NS	NS	NS
09/12/16	32.83	ND	804.66	NS	NS	NS	NS	NS	NS	NS	NS
01/24/17	33.60	ND	803.89	<0.001	<0.001	<0.001	<0.003	<0.006	0.499	---	NS
05/08/17	33.16	ND	804.33	<0.001	<0.001	<0.001	<0.003	<0.006	0.566	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-13</b>				Date of Installation 11/17/2004				Size and Type of Well 2" Type II			
TOC Elevation in feet above msl: 842.05				Screened Interval in feet bgs: 30.0-45.0							
11/23/04	39.75	---	802.30	ND	ND	ND	ND	---	ND	---	ND
10/12/06	38.44	---	803.61	ND	ND	ND	ND	---	ND	---	0.018
08/07/07	39.76	---	802.29	ND	ND	ND	ND	---	ND	---	0.090
05/20/08	43.25	---	798.80	ND	ND	ND	ND	---	ND	---	0.160
08/28/08	40.90	---	801.15	ND	ND	ND	ND	---	ND	---	0.005
02/25/09	40.06	---	801.99	NS	NS	NS	NS	---	NS	NS	NS
02/23/10	31.88	ND	810.17	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	33.71	ND	808.34	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	Inaccessible			NS	NS	NS	NS	NS	NS	NS	NS
12/13/11	34.58	ND	807.47	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	36.90	ND	805.15	<0.005	<0.005	<0.005	<0.005	---	<0.005	---	NS
04/19/12	38.32	ND	803.73	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	38.41	ND	803.64	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	0.00257
01/22/13	39.95	ND	802.10	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
04/09/13	38.73	ND	803.32	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
09/03/13	37.02	ND	805.03	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
11/12/13	37.67	ND	804.38	NS	NS	NS	NS	NS	NS	NS	NS
07/22/14	36.32	ND	805.73	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
10/21/14	37.02	ND	805.03	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
09/21/15	37.01	ND	805.04	NS	NS	NS	NS	NS	NS	NS	NS
01/25/16	36.34	ND	805.71	NS	NS	NS	NS	NS	NS	NS	NS
05/03/16	34.11	ND	807.94	NS	NS	NS	NS	NS	NS	NS	NS
09/12/16	33.49	ND	808.56	NS	NS	NS	NS	NS	NS	NS	NS
01/24/17	37.88	ND	804.17	NS	NS	NS	NS	NS	NS	NS	NS
05/08/17	37.14	ND	804.91	<0.001	<0.001	<0.001	<0.003	<0.006	<0.001	<0.005	NS
ARBCA SSTLs				1.46	131	169	113	---	2.59	---	---

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-14</b>	Date of Installation			11/16/2004				Size and Type of Well			2" Type II
	TOC Elevation in feet above msl:			839.13				Screened Interval in feet bgs:			27.0-42.0
11/23/04	36.32	---	802.81	ND	ND	ND	ND	---	ND	---	ND
10/12/06	35.62	---	803.51	ND	ND	ND	ND	---	ND	---	0.0087
08/07/07	39.64	---	799.49	0.022	ND	0.0099	0.013	0.045	ND	---	0.1200
05/20/08	38.14	---	800.99	ND	ND	ND	ND	---	ND	---	ND
08/28/08	37.97	---	801.16	ND	ND	ND	ND	---	ND	---	0.0160
02/25/09	37.65	---	801.48	NS	NS	NS	NS	---	NS	NS	NS
02/23/10	32.29	ND	806.84	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	31.07	ND	808.06	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	34.69	ND	804.44	<0.001	<0.001	<0.001	<0.003	<0.006	<0.001	---	NS
12/13/11	34.12	ND	805.01	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	36.15	ND	802.98	<0.005	<0.005	<0.005	<0.005	---	<0.005	---	NS
04/19/12	35.70	ND	803.43	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	35.86	ND	803.27	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	0.00915
01/22/13	37.42	ND	801.71	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
04/09/13	36.48	ND	802.65	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
09/03/13	34.81	ND	804.32	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
11/12/13	35.15	ND	803.98	NS	NS	NS	NS	NS	NS	NS	NS
07/22/14	34.18	ND	804.95	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
10/21/14	34.57	ND	804.56	<0.001	<0.005	<0.005	<0.005	<0.016	<0.001	---	NS
09/21/15	34.84	ND	804.29	NS	NS	NS	NS	NS	NS	NS	NS
01/25/16	34.15	ND	804.98	NS	NS	NS	NS	NS	NS	NS	NS
05/03/16	32.50	ND	806.63	NS	NS	NS	NS	NS	NS	NS	NS
09/12/16	33.49	ND	805.64	NS	NS	NS	NS	NS	NS	NS	NS
01/24/17	35.37	ND	803.76	NS	NS	NS	NS	NS	NS	NS	NS
05/08/17	34.99	ND	804.14	<0.001	<0.001	<0.001	<0.003	<0.006	<0.001	<0.005	NS
<b>ARBCA SSTLS</b>				<b>0.277</b>	<b>55.4</b>	<b>38.8</b>	<b>175</b>	<b>---</b>	<b>1.11</b>	<b>---</b>	<b>0.831</b>

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-15</b>				Date of Installation 11/16/2004				Size and Type of Well 2" Type II			
TOC Elevation in feet above msl: 838.69				Screened Interval in feet bgs: 29.0-44.0							
11/23/04	36.88	---	801.81	ND	ND	ND	ND	ND	ND	---	0.024
10/12/06	35.08	---	803.61	ND	ND	ND	ND	ND	ND	---	0.012
08/07/07	36.42	---	802.27	0.0056	ND	0.0024	0.0038	0.012	0.029	---	0.072
05/20/08	37.53	---	801.16	0.0016	ND	ND	ND	0.002	0.110	---	0.120
08/28/08	37.50	---	801.19	0.00086	ND	ND	ND	0.001	0.100	---	0.044
02/25/09	37.26	---	801.43	NS	NS	NS	NS	---	NS	NS	NS
02/23/10	32.21	ND	806.48	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	31.27	ND	807.42	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	34.36	ND	804.33	<0.001	<0.001	<0.001	<0.003	<0.006	0.0271	---	NS
12/13/11	34.51	ND	804.18	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	35.79	ND	802.90	<0.005	<0.005	<0.005	<0.005	---	0.046	---	NS
04/19/12	35.41	ND	803.28	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	35.44	ND	803.25	<0.001	<0.005	<0.005	<0.005	<0.001	0.012	---	0.014
01/22/13	37.07	ND	801.62	<0.001	<0.005	<0.005	<0.005	<0.016	0.01	---	NS
04/09/13	36.18	ND	802.51	<0.001	<0.005	<0.005	<0.005	<0.016	0.0058	---	NS
09/03/13	34.45	ND	804.24	<0.001	<0.005	<0.005	<0.005	<0.016	0.0033	---	NS
11/12/13	34.87	ND	803.82	NS	NS	NS	NS	NS	NS	NS	NS
07/22/14	33.79	ND	804.90	<0.001	<0.005	<0.005	<0.005	<0.016	0.0089	---	NS
10/21/14	34.14	ND	804.55	<0.001	<0.005	<0.005	<0.005	<0.016	0.0032	---	NS
09/21/15	34.45	ND	804.24	NS	NS	NS	NS	NS	NS	NS	NS
01/25/16	33.62	ND	805.07	NS	NS	NS	NS	NS	NS	NS	NS
05/03/16	32.14	ND	806.55	NS	NS	NS	NS	NS	NS	NS	NS
09/12/16	32.76	ND	805.93	NS	NS	NS	NS	NS	NS	NS	NS
01/24/17	35.00	ND	803.69	NS	NS	NS	NS	NS	NS	NS	NS
05/08/17	34.65	ND	804.04	<0.001	<0.001	<0.001	<0.003	<0.006	0.00424	<0.005	NS
ARBCA SSTLs				0.299	59.7	41.8	175	---	1.19	---	0.896

**TABLE 2**  
**SUMMARY OF WELL CONSTRUCTION , POTENTIOMETRIC SURFACE ELEVATION,**  
**AND GROUNDWATER ANALYTICAL DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

Date	Depth to Water feet below TOC	Free Product Thickness Feet	Potentiometric Surface Elevation feet above msl	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Total BTEX	MTBE	Naphthalene	Lead
Concentrations in mg/L											
<b>MW-16</b>				Date of Installation 11/16/2004				Size and Type of Well 2" Type II			
TOC Elevation in feet above msl: 836.36				Screened Interval in feet bgs: 27.0-42.0							
11/23/04	33.70	---	802.66	0.624	0.0181	0.0067	0.247	0.896	---	---	---
10/12/06	32.98	---	803.38	0.330	ND	ND	0.093	0.423	0.088	---	0.9500
08/07/07	34.32	---	802.04	0.130	ND	0.0045	0.040	0.1745	0.061	---	0.0900
05/20/08	35.28	---	801.08	0.014	ND	0.0010	0.0053	0.020	0.0860	---	0.0110
08/28/08	35.48	---	800.88	0.0064	0.0010	ND	0.0044	0.012	0.0910	---	0.0150
02/25/09	35.38	---	800.98	NS	NS	NS	NS	---	NS	NS	NS
02/23/10	30.41	ND	805.95	NS	NS	NS	NS	NS	NS	NS	NS
05/19/10	29.23	ND	807.13	NS	NS	NS	NS	NS	NS	NS	NS
05/23/11	32.48	ND	803.88	0.0024	<0.001	<0.001	0.0019	0.0043	0.0426	---	NS
12/13/11	33.17	ND	803.19	NS	NS	NS	NS	NS	NS	NS	NS
03/15/12	34.00	ND	802.36	0.01	<0.005	<0.005	<0.005	0.010	0.11	---	NS
04/19/12	33.51	ND	802.85	NS	NS	NS	NS	NS	NS	NS	NS
08/22/12	33.51	ND	802.85	0.0081	<0.005	<0.005	<0.005	0.0081	0.12	---	<0.001
01/22/13	35.47	ND	800.89	0.0065	<0.005	<0.005	<0.005	0.0065	0.12	---	NS
04/09/13	34.33	ND	802.03	0.0039	<0.005	<0.005	<0.005	0.0039	0.11	---	NS
09/04/13	32.34	ND	804.02	0.004	<0.005	<0.005	<0.005	0.004	0.14	---	NS
11/12/13	33.04	ND	803.32	<0.005	<0.005	<0.005	<0.005	<0.02	0.086	---	NS
07/22/14	31.71	ND	804.65	0.0026	<0.005	<0.005	<0.005	0.0026	0.12	---	NS
10/21/14	32.17	ND	804.19	0.0021	<0.005	<0.005	<0.005	0.0021	0.085	---	NS
09/21/15	32.62	ND	803.74	NS	NS	NS	NS	NS	NS	NS	NS
01/25/16	32.03	ND	804.33	NS	NS	NS	NS	NS	NS	NS	NS
05/03/16	29.94	ND	806.42	NS	NS	NS	NS	NS	NS	NS	NS
09/12/16	32.15	ND	804.21	NS	NS	NS	NS	NS	NS	NS	NS
01/24/17	33.38	ND	802.98	<0.001	<0.001	<0.001	<0.003	<0.006	0.0863	---	NS
05/08/17	32.80	ND	803.56	<0.001	<0.001	<0.001	<0.003	<0.006	0.0547	<0.005	NS
<b>ARBCA SSTLs</b>				<b>0.248</b>	<b>56.8</b>	<b>39.8</b>	<b>175</b>	<b>---</b>	<b>1.14</b>	<b>---</b>	<b>0.852</b>

NOTES: 1. TOC = Top of Casing; msl = mean sea level; mg/L = milligrams per liter; --- = Data Not Available; ND = Non Detect; NS = Not Sampled; ARBCA = Alabama Risk Based Corrective Action; ISLs = Initial Screening Levels; SSTLs = Site Specific Target Levels

2. Highlighted and bolded values exceed their respective ISLs or SSTLs.

**Table 3**  
**Summary of Intrinsic Parameters**  
**MAPCO 5605 (DFM #183)**  
**132 S. Lafayette Street, Lafayette, Chambers County, Alabama**

Date	Static Water Level	Temperature	pH	ORP	Dissolved Oxygen	Conductivity
	feet below TOC	Celcius		mV	mg/L	mS/cm
<b>MW-1</b>	<i>Date of Installation:</i>		Sept. 1994		<i>Size of Well</i>	
	<i>TOC Elevation in feet above msl:</i>		839.83		<i>Screened Interval in feet bgs:</i>	
					29.0-44.0	
10/12/2006	---	24.60	6.13	138.0	2.07	0.166
8/7/2007	---	25.65	6.02	117.3	2.41	0.199
5/20/2008	---	22.50	6.04	153.3	5.47	0.234
03/15/12	36.46	24.19	5.66	60.1	1.04	0.156
01/22/13	37.67	15.66	6.35	72.0	4.14	0.179
04/09/13	36.55	22.8	6.31	157.2	2.92	0.037
09/04/13	34.83	23.28	5.34	304.5	1.32	0.163
07/22/14	34.09	23.20	7.31	332.7	1.28	0.123
10/21/14	34.54	23.40	6.78	64.0	1.23	0.125
09/21/15	34.89	23.50	6.22	317.0	1.52	0.122
01/25/16	34.16	20.34	6.24	285.0	1.82	0.162
05/03/16	32.33	21.70	6.60	246.4	1.60	0.116
09/12/16	33.38	22.81	6.58	193.1	2.61	0.138
05/08/17	35.10	20.50	6.97	235.4	3.00	0.092
<b>MW-2</b>	<i>Date of Installation:</i>		Sept. 1994		<i>Size of Well</i>	
	<i>TOC Elevation in feet above msl:</i>		838.97		<i>Screened Interval in feet bgs:</i>	
					29.0-44.0	
10/12/2006	---	29.30	6.11	21.3	2.44	0.539
8/7/2007	---	32.00	6.47	-31.6	4.32	0.464
5/20/2008	---	22.05	6.450	-58.8	5.470	0.481
8/28/2008	---	24.90	6.070	---	0.500	0.390
02/25/09	---	18.40	7.10	---	1.76	0.064
02/23/10	---	12.12	7.09	3.7	6.30	0.024
12/13/11	---	21.44	6.82	111.2	7.75	---
03/15/12	35.76	25.39	6.27	-54.1	1.24	0.381
04/19/12	35.26	22.22	6.36	-47.2	0.69	0.412
01/22/13	37.00	15.93	6.74	250.2	2.70	0.496
04/09/13	36.00	24.6	6.72	14.2	2.05	0.483
09/04/13	34.15	23.53	6.35	240.2	2.13	0.395
07/22/14	33.50	23.70	8.11	325.7	0.70	0.346
10/21/14	33.84	22.70	6.91	43.6	1.55	0.364
09/21/15	34.22	23.40	6.17	280.0	0.84	0.356
01/25/16	33.25	20.42	7.05	155.8	1.81	0.322
05/03/16	31.80	21.40	6.61	253.6	1.21	0.323
09/12/16	32.69	22.89	7.12	157.9	2.89	0.309
01/24/17	34.88	20.00	6.29	176.7	3.00	0.394

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**Summary of Intrinsic Parameters**  
**MAPCO 5605 (DFM #183)**  
**132 S. Lafayette Street, Lafayette, Chambers County, Alabama**

Date	Static Water Level	Temperature	pH	ORP	Dissolved Oxygen	Conductivity
	feet below TOC	Celcius		mV	mg/L	mS/cm
<b>MW-3</b>	<i>Date of Installation:</i> Sept. 1994		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 838.77		<i>Screened Interval in feet bgs:</i> 29.0-44.0			
10/12/2006	---	22.56	6.52	-70.100	0.40	0.583
8/7/2007	---	31.39	6.52	-81.700	0.87	0.694
5/20/2008	---	22.55	6.450	-75.700	3.120	0.638
8/28/2008	---	24.20	6.440	---	0.500	0.517
02/23/10	---	12.260	8.110	-80.100	9.200	0.045
05/19/10	---	12.890	7.970	115.100	10.830	0.498
12/13/11	---	21.320	7.270	101.600	8.670	---
03/15/12	35.55	24.54	6.24	-108.70	0.84	0.371
04/19/12	35.11	22.21	6.41	-76.0	0.85	0.376
01/22/13	36.80	16.62	6.85	264.8	0.68	0.608
04/09/13	35.84	22.0	6.87	5.6	3.00	0.463
09/04/13	33.92	23.40	6.26	268.2	1.11	0.414
07/22/14	33.29	25.90	7.96	313.9	0.76	0.450
10/21/14	33.61	22.70	6.95	44.3	1.56	0.440
09/21/15	34.03	22.30	5.93	285.6	1.49	0.347
01/25/16	33.51	20.61	6.03	262.3	1.76	0.340
05/03/16	31.56	21.70	6.78	233.7	1.49	0.336
09/12/16	32.51	23.57	7.07	82.1	1.75	0.355
01/24/17	34.72	20.30	6.41	200.8	2.26	0.459
05/08/17	34.28	20.50	6.90	217.0	3.05	0.321
<b>MW-4</b>	<i>Date of Installation:</i> Sept. 1994		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 838.83		<i>Screened Interval in feet bgs:</i> 28.0-43.0			
10/12/2006	---	20.80	6.38	-60.4	1.80	0.432
8/7/2007	---	25.79	6.36	-17.6	1.36	0.459
5/20/2008	---	23.13	6.35	-33.4	3.96	0.427
8/28/2008	---	25.30	6.39	---	-0.48	0.353
03/15/12	35.61	26.51	6.02	-64.6	0.85	0.406
01/22/13	36.84	16.53	6.22	268.7	2.38	0.409
04/09/13	35.88	23.1	6.64	19.0	2.28	0.394
09/04/13	33.95	22.96	6.22	270.7	2.84	0.406
07/22/14	33.33	23.40	7.62	351.7	1.87	0.330
10/21/14	33.62	22.80	7.01	24.9	1.86	0.320
09/21/15	34.05	24.00	7.00	285.5	2.17	0.316
01/25/16	33.37	21.16	7.03	160.1	1.77	0.320
05/03/16	31.54	21.90	6.71	224.7	2.37	0.300
09/12/16	32.09	23.03	6.70	100.2	1.72	0.307
01/24/17	34.74	20.30	6.45	198.1	3.48	0.275
05/08/17	34.30	20.80	6.92	223.0	3.77	0.282



**Table 3**  
**Summary of Intrinsic Parameters**  
**MAPCO 5605 (DFM #183)**  
**132 S. Lafayette Street, Lafayette, Chambers County, Alabama**

Date	Static Water Level	Temperature	pH	ORP	Dissolved Oxygen	Conductivity
	feet below TOC	Celcius		mV	mg/L	mS/cm
<b>MW-5</b>	<i>Date of Installation:</i> Nov. 1995		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 839.49		<i>Screened Interval in feet bgs:</i> 28.0-38.0			
10/12/2006	---	20.80	6.38	-60.4	1.80	0.432
8/7/2007	---	25.79	6.36	-17.6	1.36	0.459
5/20/2008	---	23.13	6.35	-33.4	3.96	0.427
03/15/12	36.11	25.93	5.99	-150.8	3.09	0.145
04/09/13	36.25	25.1	6.13	49.2	3.23	0.219
09/04/13	34.36	23.03	5.18	305.3	1.15	0.150
07/22/14	33.62	22.70	7.13	331.7	1.48	0.120
10/21/14	34.10	16.90	7.00	16.9	0.98	0.134
09/21/15	34.47	23.70	6.67	306.7	2.04	0.120
01/25/16	33.52	20.78	6.63	188.2	2.99	0.179
05/03/16	31.85	21.90	6.81	225.1	1.51	0.109
09/12/16	32.94	22.72	6.71	211.7	2.31	0.118
05/08/17	34.69	20.50	6.94	225.4	3.00	0.094
<b>MW-6</b>	<i>Date of Installation:</i> Nov. 1995		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 837.53		<i>Screened Interval in feet bgs:</i> 29.0-44.0			
10/12/2006	---	22.40	6.34	12.6	4.48	0.411
8/7/2007	---	30.76	6.40	9.5	3.72	0.466
5/20/2008	---	24.61	6.44	-69.2	4.77	0.514
8/28/2008	---	24.00	5.42	---	2.13	0.426
03/15/12	34.39	23.89	6.31	-106.4	1.35	0.429
01/22/13	35.67	17.33	6.46	187.0	1.18	0.495
04/09/13	34.69	23.3	6.87	5.5	2.01	0.457
09/04/13	32.76	23.98	6.05	251.4	1.17	0.473
07/22/14	32.11	23.40	8.00	302.0	0.66	0.386
10/21/14	32.48	22.60	7.06	67.5	1.34	0.381
01/24/17	33.60	20.40	6.47	195.6	2.53	0.349
05/08/17	33.14	20.70	6.86	229.1	3.03	0.350
<b>MW-7</b>	<i>Date of Installation:</i> Nov. 1995		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 837.92		<i>Screened Interval in feet bgs:</i> 28.0-43.0			
10/12/2006	---	22.10	6.10	-25.2	2.00	0.244
8/7/2007	---	29.33	5.86	63.9	1.25	0.262
5/20/2008	---	23.88	6.10	39.6	5.33	0.257
8/28/2008	---	23.60	6.29	---	2.11	0.216
03/15/12	34.94	24.54	5.71	53.9	1.16	0.203
01/22/13	36.24	17.39	6.18	243.0	1.04	0.297
04/09/13	35.04	23.1	6.71	14.9	2.44	0.369
09/04/13	33.16	23.62	6.20	232.3	1.11	0.392
07/22/14	32.49	23.50	7.79	315.0	0.97	0.315
10/21/14	32.92	22.30	7.13	76.9	1.19	0.233
09/21/15	33.31	23.60	6.69	301.5	1.79	0.234
01/25/16	32.22	20.19	6.92	173.5	2.38	0.275
05/03/16	30.80	21.40	6.71	232.7	1.36	0.281
09/12/16	31.82	23.01	6.69	224.2	2.04	0.206
01/24/17	33.97	20.30	6.47	190.8	2.58	0.224
05/08/17	33.57	20.60	6.49	239.4	3.18	0.263

**Table 3**  
**Summary of Intrinsic Parameters**  
**MAPCO 5605 (DFM #183)**  
**132 S. Lafayette Street, Lafayette, Chambers County, Alabama**

Date	Static Water Level	Temperature	pH	ORP	Dissolved Oxygen	Conductivity
	feet below TOC	Celcius		mV	mg/L	mS/cm
<b>MW-8</b>	<i>Date of Installation:</i> July 1996		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 839.6		<i>Screened Interval in feet bgs:</i> 2.5-4.0			
10/12/2006	---	22.79	5.62	110.3	2.71	0.156
8/7/2007	---	24.39	6.06	89.2	2.90	0.204
8/28/2008	---	24.90	6.10	---	2.89	0.15
03/15/12	3.50	---	---	---	---	---
01/22/13	1.77	9.94	5.48	372.1	9.55	0.216
04/09/13	3.71	Insufficient Water to Obtain Readings				
09/03/13	3.19	29.32	7.61	262.9	3.96	0.147
07/22/14	3.60	Insufficient Water to Obtain Readings				
10/21/14	3.76	Insufficient Water to Obtain Readings				
<b>MW-9</b>	<i>Date of Installation:</i> July 1996		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 839.67		<i>Screened Interval in feet bgs:</i> 25.0-40.0			
10/12/2006	---	24.29	7.22	37.0	4.52	0.263
8/7/2007	---	29.98	6.23	37.0	1.97	0.417
8/28/2008	---	23.90	5.75	---	2.19	0.19
03/15/12	36.39	23.56	5.95	23.0	1.33	0.288
04/19/12	35.86	22.10	6.55	31.3	1.21	0.280
01/22/13	37.48	16.93	6.20	218.2	3.46	0.286
04/09/13	36.44	24.6	6.66	323.6	3.64	0.017
09/04/13	34.62	22.50	5.92	289.2	1.58	0.157
07/22/14	33.89	22.80	7.25	328.3	1.20	0.130
10/21/14	34.37	22.30	6.84	127.1	1.50	0.133
09/21/15	34.70	22.80	6.41	303.8	1.53	0.120
01/25/16	33.92	21.03	6.31	171.7	3.20	0.132
05/03/16	32.17	21.80	6.56	235.2	1.99	0.121
09/12/16	33.19	22.48	6.38	194.3	1.89	0.126
05/08/17	34.94	20.40	6.96	233.4	3.54	0.103
<b>MW-10</b>	<i>Date of Installation:</i> July 1996		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 839.57		<i>Screened Interval in feet bgs:</i> 25.0-40.0			
10/12/2006	---	22.17	5.78	105.9	1.92	0.116
8/7/2007	---	22.30	5.78	82.7	1.58	0.153
02/25/09	---	18.60	8.44	---	3.04	0.1280
02/23/10	---	11.18	7.92	16.2	5.69	0.065
05/19/10	---	12.82	7.52	100.9	9.61	0.095
12/13/11	---	21.47	6.28	108.3	6.87	---
03/15/12	36.19	25.19	5.65	73.1	1.48	0.114
04/19/12	35.69	22.23	6.01	126.6	1.43	0.110
01/22/13	37.39	17.16	6.10	49.9	2.23	0.135
04/09/13	36.29	22.1	6.08	51.6	3.44	0.107
09/04/13	34.45	22.37	5.00	265.1	1.36	0.094
07/22/14	33.69	23.20	7.02	345.1	1.80	0.077
10/21/14	34.18	21.90	6.80	141.0	1.32	0.077
05/08/17	34.77	20.70	6.87	234.7	3.92	0.065

**Table 3**  
**Summary of Intrinsic Parameters**  
**MAPCO 5605 (DFM #183)**  
**132 S. Lafayette Street, Lafayette, Chambers County, Alabama**

Date	Static Water Level	Temperature	pH	ORP	Dissolved Oxygen	Conductivity
	feet below TOC	Celcius		mV	mg/L	mS/cm
<b>MW-11</b>	<i>Date of Installation:</i> July 1996		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 838.38		<i>Screened Interval in feet bgs:</i> 25.0-40.0			
10/12/2006	---	23.52	6.33	-86.6	1.53	0.459
8/7/2007	---	29.94	6.30	-18.2	1.38	0.557
5/20/2008	---	22.32	6.31	-75.1	4.36	0.49
8/28/2008	---	23.50	5.94	---	-0.52	0.39
03/15/12	35.15	24.97	5.96	-125.7	1.07	0.471
01/22/13	36.42	17.22	6.41	146.7	1.63	0.482
04/09/13	35.45	23.5	6.70	486.0	1.01	0.015
09/04/13	33.51	22.70	6.28	217.7	1.17	0.469
07/22/14	32.84	23.30	7.78	315.0	1.00	0.390
10/21/14	33.21	21.70	6.93	147.0	1.05	0.315
09/21/15	33.65	22.80	6.90	279.0	2.07	0.368
01/25/16	33.13	21.02	6.67	146.8	2.26	0.379
05/03/16	31.14	22.10	6.80	230.1	1.70	0.364
09/12/16	32.18	23.39	6.78	169.9	1.94	0.306
01/24/17	34.34	19.90	6.46	192.9	2.68	0.315
05/08/17	33.90	20.80	6.98	221.0	2.85	0.335
<b>MW-12</b>	<i>Date of Installation:</i> July 1996		<i>Size of Well</i> 2"			
	<i>TOC Elevation in feet above msl:</i> 837.49		<i>Screened Interval in feet bgs:</i> 25.0-40.0			
10/12/2006	---	23.44	5.79	103.5	2.29	0.753
8/7/2007	---	26.41	5.50	136.6	2.29	0.901
5/20/2008	---	24.10	5.78	54.5	3.27	0.79
8/28/2008	---	23.20	5.95	---	-0.48	0.65
05/19/10	---	13.25	5.95	131.4	5.28	0.750
03/15/12	34.37	22.79	5.33	96.0	1.08	0.976
01/22/13	35.71	17.59	6.30	227.0	1.45	0.916
04/09/13	34.65	23.1	6.18	45.8	0.79	0.045
09/04/13	32.75	22.93	6.08	236.9	1.33	0.671
07/22/14	32.10	24.60	7.97	317.2	0.93	0.800
10/21/14	32.51	21.30	7.21	175.3	1.33	0.820
01/24/17	33.60	20.20	6.46	188.7	2.85	0.740
05/08/17	33.16	20.80	6.33	228.5	2.62	0.690
<b>MW-13</b>	<i>Date of Installation:</i> 11/17/2004		<i>Size and Type of Well</i> 2" Type II			
	<i>TOC Elevation in feet above msl:</i> 842.05		<i>Screened Interval in feet bgs:</i> 30.0-45.0			
10/12/2006	---	20.63	5.52	214.4	6.71	0.029
8/7/2007	---	22.50	5.62	228.6	6.80	0.052
5/20/2008	---	21.74	5.77	195.2	7.43	0.06
8/28/2008	---	21.70	5.50	--	3.02	0.04
03/15/12	36.90	22.01	5.43	173.0	3.29	0.040
01/22/13	39.95	14.27	6.46	60.2	7.81	0.039
04/09/13	38.73	21.5	5.89	62.8	6.12	0.035
09/03/13	37.02	21.81	6.00	303.9	7.75	0.033
07/22/14	36.32	23.20	6.57	409.0	3.13	0.024
10/21/14	37.02	20.10	7.09	189.7	2.48	0.039
05/08/17	37.14	20.50	6.59	210.5	4.78	0.025

**Table 3**  
**Summary of Intrinsic Parameters**  
**MAPCO 5605 (DFM #183)**

Date	Static Water Level	Temperature	pH	ORP	Dissolved Oxygen	Conductivity
	feet below TOC	Celcius		mV	mg/L	mS/cm
<b>MW-14</b>	Date of Installation:	11/16/2004		Size and Type of Well		2" Type II
	TOC Elevation in feet above msl:	839.13		Screened Interval in feet bgs:		27.0-42.0
10/12/2006	---	22.47	5.29	202.6	7.79	0.058
8/7/2007	---	24.22	5.46	235.4	5.44	0.073
5/20/2008	---	23.88	5.36	222.1	6.62	0.07
8/28/2008	---	23.10	5.72	---	-0.53	0.05
03/15/12	36.15	23.02	5.01	199.0	2.83	0.157
01/22/13	37.42	14.56	6.03	366.2	7.31	0.131
04/09/13	36.48	22.8	5.60	133.6	4.36	0.080
09/03/13	34.81	21.25	4.38	315.9	6.27	0.133
07/22/14	34.18	22.90	6.93	384.5	2.83	0.117
10/22/14	34.57	21.00	6.67	268.9	2.17	0.107
05/08/17	34.99	20.20	7.00	224.3	5.23	0.078
<b>MW-15</b>	Date of Installation:	11/16/2004		Size and Type of Well		2" Type II
	TOC Elevation in feet above msl:	838.69		Screened Interval in feet bgs:		29.0-44.0
10/12/2006	---	21.79	5.67	188.5	4.64	0.080
8/7/2007	---	26.28	6.10	209.1	5.60	0.160
5/20/2008	---	23.55	5.89	19.0	5.20	0.10
8/28/2008	---	22.50	5.93	---	2.67	0.14
03/15/12	35.79	22.77	5.60	104.6	1.23	0.142
01/22/13	37.07	15.05	6.72	20.1	4.58	0.148
04/09/13	36.18	21.5	6.23	146.3	2.25	0.042
09/03/13	34.45	20.71	5.40	276.8	2.00	0.159
07/22/14	33.79	22.30	6.99	381.5	2.48	0.118
10/22/14	35.00	19.60	6.57	267.9	2.08	0.080
05/08/17	34.65	20.00	6.96	226.5	3.76	0.115
<b>MW-16</b>	Date of Installation:	11/16/2004		Size and Type of Well		2" Type II
	TOC Elevation in feet above msl:	836.36		Screened Interval in feet bgs:		27.0-42.0
10/12/2006	---	23.60	5.39	323.3	2.54	0.490
8/7/2007	---	26.04	5.64	219.4	2.54	0.689
5/20/2008	---	25.44	5.51	---	2.15	0.52
8/28/2008	---	22.80	6.20	---	2.46	510.00
03/15/12	34.00	22.85	5.08	182.2	1.13	0.617
01/22/13	35.47	18.99	6.03	142.7	2.10	0.704
04/09/13	39.33	23.4	6.02	71.0	1.16	0.055
09/04/13	32.34	23.04	5.73	256.7	1.74	0.671
07/22/14	31.71	23.50	7.51	349.0	2.09	0.421
10/22/14	32.17	20.40	6.69	233.7	1.82	0.385
01/24/17	33.38	20.40	6.39	183.2	3.05	0.630
05/08/17	32.80	21.00	6.39	186.4	3.08	0.560
NOTES:	1. TOC = Top of Casing; msl = mean sea level; mg/L = milligrams per liter; --- = Data Not Available; ND = Non Detect; NS - Not Sampled; ARBCA = Alabama Risk Based Corrective Action; ISLs = Initial Screening Levels; SSTLs = Site Specific Target Levels					

**TABLE 4**  
**SUMMARY OF MEME DATA**  
**MAPCO #5605 (DFM #183)**  
**132 LAFAYETTE STREET, LAFAYETTE, CHAMBERS COUNTY, ALABAMA**

MEME DATE	Duration	Equivalent Gallons of Hydrocarbons	Hydrocarbons	Total Liquid	Extraction Wells
	hrs.	gal.	lbs.	gal.	per event
03/22/11	8	1.7	10	1,690	MW-3 and MW-9
04/15/11	8	1.5	9.0	1,551	MW-3 and MW-9
02/02/12	8	0.27	1.65	1,100	MW-2, MW-3 and MW-10
03/02/12	8	0.28	3.37	2,650	MW-2, MW-3 and MW-10
07/26/13	8	1.596	9.83	1,050	MW-2 and MW-3
08/16/13	8	1.833	11.29	1,100	MW-2 and MW-3
09/19/13	8	1.375	8.47	1,000	MW-2 and MW-3
10/17/13	8	1.507	9.29	1,300	MW-2 and MW-3
07/31/15	8	1.973	12.15	1,100	MW-2 and MW-3
08/14/15	8	1.367	8.42	1,200	MW-2 and MW-3
09/02/15	8	0.600	3.69	1,300	MW-2 and MW-3
10/07/15	8	1.587	9.78	1,235	MW-2 and MW-3
11/19/15	8	1.795	11.06	1,150	MW-2 and MW-3
12/17/15	8	1.166	7.18	1,000	MW-2 and MW-3
02/18/16	8	0.888	5.47	1,250	MW-2 and MW-3
03/17/16	8	0.997	6.14	900	MW-2 and MW-3
04/20/16	8	1.989	12.25	1,200	MW-2 and MW-3
06/02/16	8	1.945	11.98	950	MW-2 and MW-3
07/08/16	8	1.248	7.69	1,500	MW-2 and MW-3
08/10/16	8	0.422	2.60	1,000	MW-2 and MW-3
10/05/16	8	0.970	5.97	1,370	MW-2, MW-3, and MW-4
11/09/16	8	2.090	12.86	1,400	MW-2, MW-3, and MW-4
12/08/16	8	3.450	21.23	1,200	MW-2, MW-3, and MW-4
02/20/17	8	2.540	15.62	1,800	MW-2, MW-3, MW-4, and MW-7
03/09/17	8	1.030	6.31	2,000	MW-2, MW-3, MW-4, and MW-7
04/13/17	8	0.850	5.24	2,100	MW-3, MW-4, MW-7, and MW-11
<b>TOTALS</b>	<b>208</b>	<b>36.97</b>	<b>228.54</b>	<b>35096</b>	

## Appendix B



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## MONITORING WELL LOG

BORING NO: MW-8

PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183

CLIENT: Williamson Oil Company, Inc.

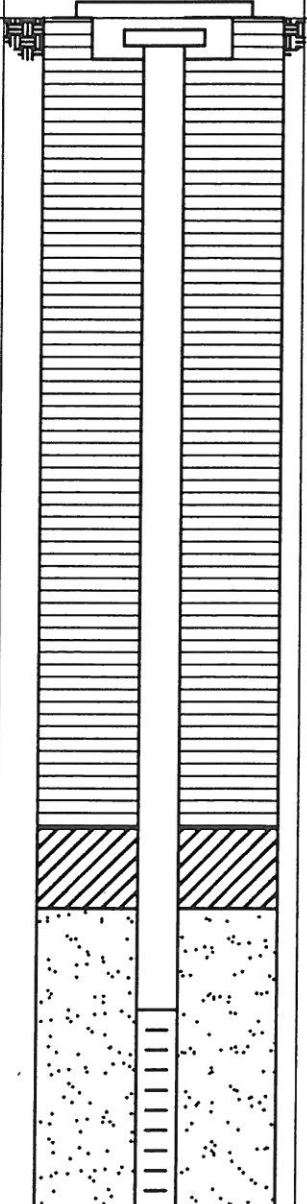
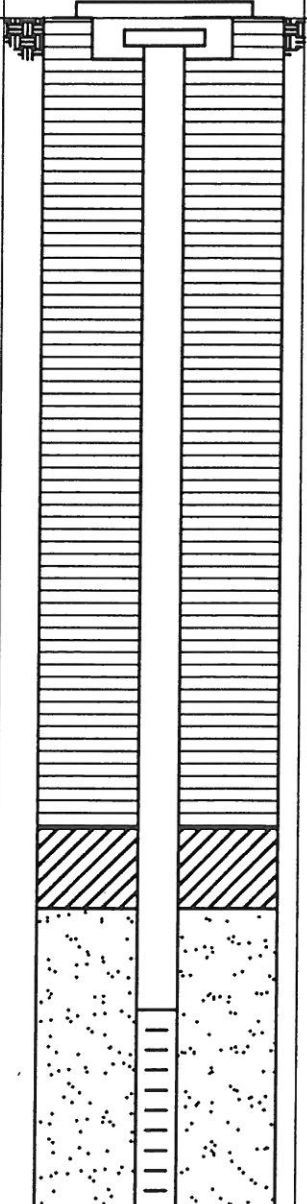
PROJECT LOCATION: LaFayette, Alabama

DRILLING MTHD: Hollow Stem Auger

SAMPLE MTHD: Split Spoon

DATE STARTED: 7-29-96 DATE FINISHED: 7-31-96

ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
							FIUSH MOUNTED WELL COVER
	Brown silty clay	0.0					Bentonite cement grout
			1	11			
	Brown silty clay with red sand	5.0					
			2	18			Well casing consists of 2" diameter Schedule 40 PVC section approximately 25.0 feet in length.
	Brown sandy clay with quartz stones	10.0					
			3	12			
	Brown silty sand with quartz stones	15.0					
			4	7			
	Brown and white mix sandy clay	20.0					Approximately 2.0 feet thick bentonite pellet seal
			5	24			Sand pack material of uniform gradation
	Black, white and brown mix silty sand	25.0					Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).
			6	10			
		30.0					

BOTTOM OF TEST BORING: 40.0





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## MONITORING WELL LOG

BORING NO: MW-8

PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183

CLIENT: Williamson Oil Company, Inc.

PROJECT LOCATION: LaFayette, Alabama

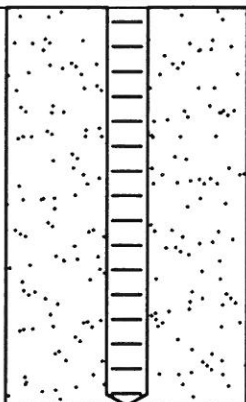
DRILLING MTHD: Hollow Stem Auger

SAMPLE MTHD: Split Spoon

DATE STARTED: 7/29/96

DATE FINISHED: 7/31/96

ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
							FIUSH MOUNTED COVER
	Brown and black sand	30.0				Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).	
		35.0	7	5			
		40.0	8	7			
		45.0					
		50.0					
		55.0					
		60.0					

BOTTOM OF TEST BORING: 40.0

bg1



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Environmental Engineers & Scientists

## MONITORING WELL LOG

BORING NO: MW-9

PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183

CLIENT: Williamson Oil Company, Inc.

PROJECT LOCATION: LaFayette, Alabama

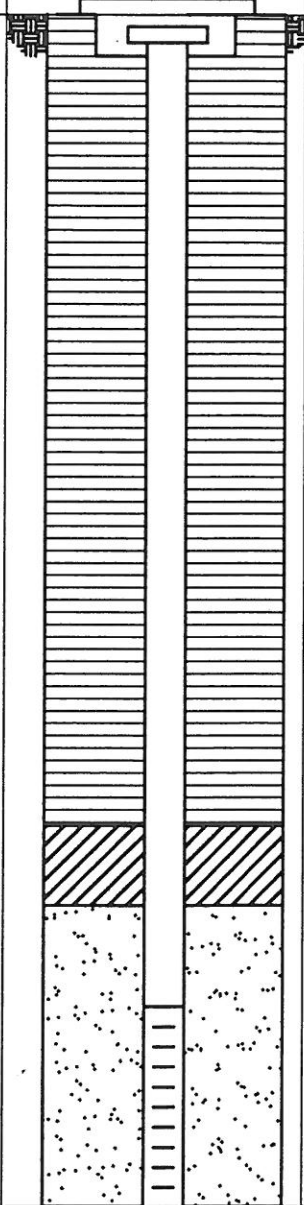
DRILLING MTHD: Hollow Stem Auger

SAMPLE MTHD: Split Spoon

DATE STARTED: 7-29-96

DATE FINISHED: 7-31-96

ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
							FIUSH MOUNTED WELL COVER
	Tan and red silty clay	0.0					Bentonite cement grout
			1	4			
	Brown yellow sandy silty clay	5.0					
			2	6			Well casing consists of 2" diameter Schedule 40 PVC section approximately 25.0 feet in length.
	Red brown silt with white sand and quartz mix	10.0					
			3	6			
	Yellow brown silty sand	15.0					
			4	4			
	Yellow brown silty sand	20.0					Approximately 2.0 feet thick bentonite pellet seal
			5	10			Sand pack material of uniform gradation
	Yellow-red silty sand with white sand and quartz	25.0					Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).
			6	12			
		30.0					
BOTTOM OF TEST BORING: 40.0							
No Recovery bg1							

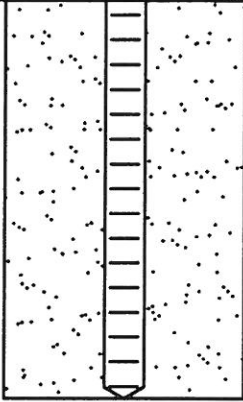


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# MONITORING WELL LOG

BORING NO: MW-9  
PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183 CLIENT: Williamson Oil Company, Inc.  
PROJECT LOCATION: LaFayette, Alabama  
DRILLING MTHD: Hollow Stem Auger SAMPLE MTHD: Split Spoon  
DATE STARTED: 7/29/96 DATE FINISHED: 7/31/96 ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
							FIUSH MOUNTED COVER
	Black sand and quartz	30.0					Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).
			7	6			
	No Recovery	35.0			7/31/96		
		40.0	NR				
		45.0					
		50.0					
		55.0					
		60.0					

BOTTOM OF TEST BORING: 40.0

= No Recovery

bg1



Bhate Environmental, Inc.  
Environmental Engineers & Scientists

## MONITORING WELL LOG

BORING NO: MW-10

PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183

CLIENT: Williamson Oil Company, Inc.

PROJECT LOCATION: LaFayette, Alabama

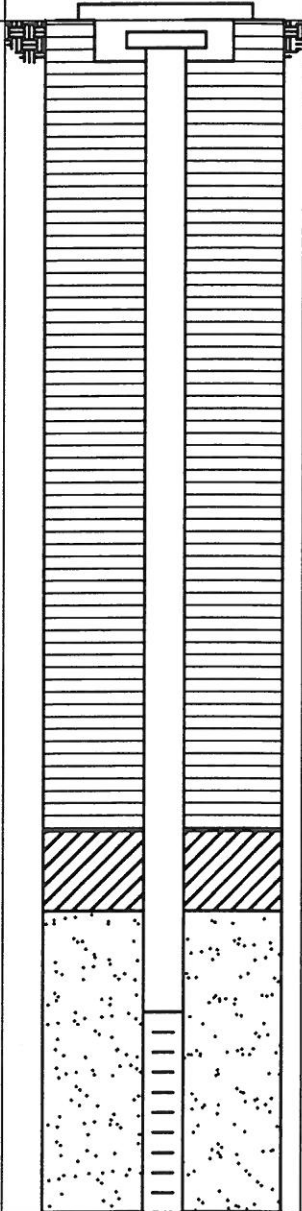
DRILLING MTHD: Hollow Stem Auger

SAMPLE MTHD: Split Spoon

DATE STARTED: 7-29-96

DATE FINISHED: 7-31-96

ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
							FIUSH MOUNTED WELL COVER
	Red yellow silty clay	0.0					Bentonite cement grout
			1	8			
	Red silty clay	5.0					
			2	20			Well casing consists of 2" diameter Schedule 40 PVC section approximately 25.0 feet in length.
	Yellow sandy silt with quartz	10.0					
			3	7			
	Yellow silty sand with red sand	15.0					
			4	2			Approximately 2.0 feet thick bentonite pellet seal
	Tan, yellow sandy silt with white quartz	20.0					Sand pack material of uniform graduation
			5	3			
	White silty sand with quartz	25.0					Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).
			6	10			

BOTTOM OF TEST BORING: 40.0

ND=No Recovery



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## MONITORING WELL LOG

BORING NO: MW-10

PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183

CLIENT: Williamson Oil Company, Inc.

PROJECT LOCATION: LaFayette, Alabama

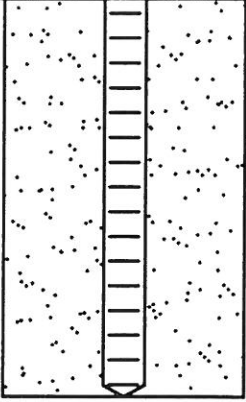
DRILLING MTHD: Hollow Stem Auger

SAMPLE MTHD: Split Spoon

DATE STARTED: 7/29/96

DATE FINISHED: 7/31/96

ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
							FLUSH MOUNTED COVER
	Tan and olive silty sand	30.0					Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).
			7	13			
	No Recovery	35.0			7/31/96		
			NR				
		40.0					
		45.0					
		50.0					
		55.0					
		60.0					

BOTTOM OF TEST BORING: 40.0

= No Recovery

bg1



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## MONITORING WELL LOG

BORING NO: MW-11  
PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183

CLIENT: Williamson Oil Company, Inc.

PROJECT LOCATION: LaFayette, Alabama

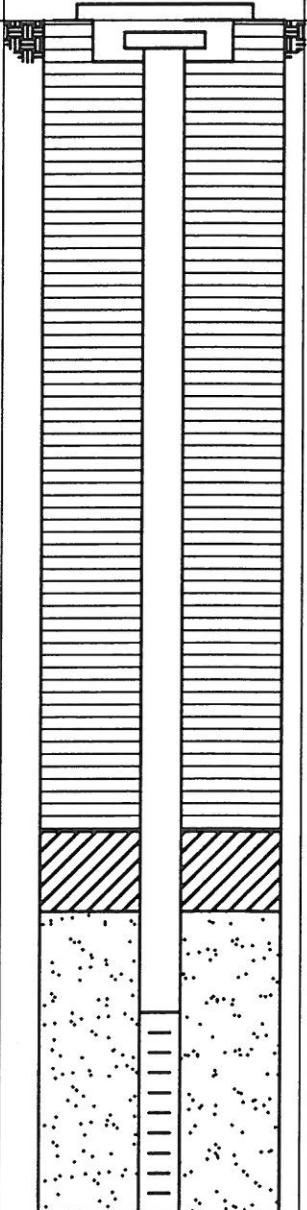
DRILLING MTHD: Hollow Stem Auger

SAMPLE MTHD: Split Spoon

DATE STARTED: 7-29-96

DATE FINISHED: 7-31-96

ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
		0.0					<b>FLUSH MOUNTED WELL COVER</b>  Bentonite cement grout  Well casing consists of 2" diameter Schedule 40 PVC section approximately 25.0 feet in length.  Approximately 2.0 feet thick bentonite pellet seal  Sand pack material of uniform gradation  Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).
	Red silty clay						
		5.0	1	14			
	Brown-yellow sandy clay						
		10.0	2	3			
	Brown silty sand with white and black impurities						
		15.0	3	11			
	Brown sandy clay with black and white impurities						
		20.0	4	7			
	Red, yellow and brown sandy clay with black impurities						
		25.0	5	10			
	Brown sandy clay with black impurities						
		30.0	6	11			

BOTTOM OF TEST BORING: 40.0

NR=No Recovery



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## MONITORING WELL LOG

BORING NO: MW-11

PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183

CLIENT: Williamson Oil Company, Inc.

PROJECT LOCATION: LaFayette, Alabama

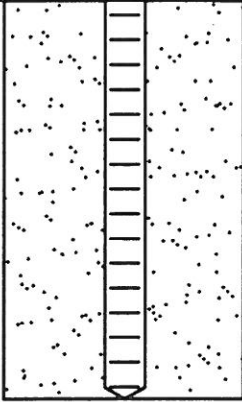
DRILLING MTHD: Hollow Stem Auger

SAMPLE MTHD: Split Spoon

DATE STARTED: 7/29/96

DATE FINISHED: 7/31/96

ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
							FLUSH MOUNTED COVER
	Brown sandy clay	30.0					Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).
			7	13			
	No Recovery	35.0					
			NR				
		40.0					
		45.0					
		50.0					
		55.0					
		60.0					

BOTTOM OF TEST BORING: 40.0

= No Recovery

bg1





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# MONITORING WELL LOG

BORING NO: MW-12

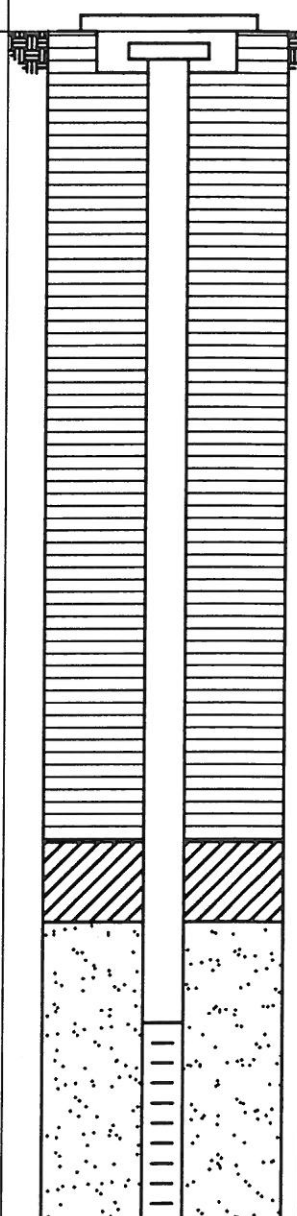
PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183 CLIENT: Williamson Oil Company, Inc.

PROJECT LOCATION: LaFayette, Alabama

DRILLING MTHD: Hollow Stem Auger SAMPLE MTHD: Split Spoon

DATE STARTED: 7-29-96 DATE FINISHED: 7-31-96 ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
		0.0					<b>FIUSH MOUNTED WELL COVER</b>
	Red and yellow silty clay						Bentonite cement grout
		5.0	1	8			
	Brown and yellow sandy clay with quartz stone						Well casing consists of 2" diameter Schedule 40 PVC section approximately 25.0 feet in length.
		10.0	2	4			
	White sandy clay with granular quartz						
		15.0	3	10			
	Brown sandy clay with black and white Impurities						
		20.0	4	9			Approximately 2.0 feet thick bentonite pellet seal
	Brown sandy clay with yellow and black Impurities						Sand pack material of uniform graduation
		25.0	5	6			
	Brown sandy clay with black Impurities						Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).
		30.0	6	7			

BOTTOM OF TEST BORING: 40

ND=No Recovery



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## MONITORING WELL LOG

BORING NO: MW-12

PROJECT NO: 3960042

PROJECT NAME: Discount Food Mart #183

CLIENT: Williamson Oil Company, Inc.

PROJECT LOCATION: LaFayette, Alabama

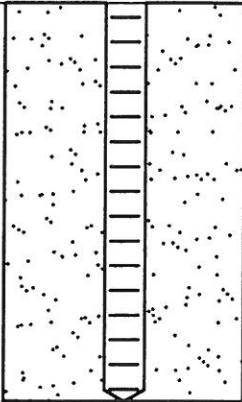
DRILLING MTHD: Hollow Stem Auger

SAMPLE MTHD: Split Spoon

DATE STARTED: 7/29/96

DATE FINISHED: 7/31/96

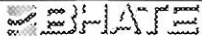
ENGINEER/GEOLOGIST: GST/CTC

ELEV.	LITHOLOGIC DESCRIPTION	DEPTH. (FT.)	SAMPLE	TPH (mg/kg)	WATER LEVEL	WELL SECTION	ANNULAR AND WELL CONSTRUCTION MATERIALS
							<b>FLUSH MOUNTED COVER</b>
	Tan and olive silty sand	30.0					Well screen consists of an approximately 15.0 foot section of Schedule 40 PVC 0.010 inch factory slotted screen (2 inch diameter).
			7	13			
	No Recovery	35.0					
			NR				
		40.0					
		45.0					
		50.0					
		55.0					
		60.0					

BOTTOM OF TEST BORING: 40.0

= No Recovery

bg1



# WELL CONSTRUCTION DIAGRAM (Flush Mount)

SITE:	Discount Food Mart #183	WELL/BORING ID:	MW-13
PROJECT NAME:	Discount Food Mart #183	DRILLING METHOD:	Hollow Stem Auger
PROJECT NO./PHASE:	9040079	DATE(S):	17-Nov-04
DRILLING CONTRACTOR:	Technical Drilling Services, Inc.	SURVEYOR:	N/A
DRILLER:	Duncan Campbell	NORTHING (NAD 83):	N/A
GEOLOGIST:	Katherine Thompson	EASTING (NAD 83):	N/A

NOT TO SCALE

## PROTECTIVE CASING

Type: Steel  
Dimensions: 8" Diameter  
Length: 1 foot

Surface Elevation (NAVD 88): N/A

Existing Surface

Casing Elevation (NAVD 88): 842.050

## SURFACE PAD

Dimensions: 2' x 2'  
Type: Concrete

Borehole Diameter (in): 8.00

Well Casing Diameter (in): 2.00

## WELL CASING (RISER)

Manufacturer: Boart Longyear  
Type/Material: Schedule 40 PVC  
Diameter (in): 2.0  
Connection: Threaded

## WELL SCREEN

Manufacturer: Boart Longyear  
Type/Material: Schedule 40 PVC  
Slot Size (in): 0.010  
Slot Type: Continuous Factory Slot  
Connection: Threaded

## ANNULAR SEAL

Type: N/A  
Manufacturer: \_\_\_\_\_  
Mud Scale: \_\_\_\_\_  
Installation: Gravity Tremie Pressure  
Volume: \_\_\_\_\_  
Hydration Time: \_\_\_\_\_

## BENTONITE SEAL

Manufacturer: \_\_\_\_\_  
Product Name: Bentonite pellets  
Size: 1/2"  
Volume (ft3): \_\_\_\_\_  
Installation: Tremie Gravity

## PRIMARY FILTER PACK

Manufacturer: \_\_\_\_\_  
Product Name: Silica Sand  
Size: \_\_\_\_\_  
Volume (ft3): \_\_\_\_\_  
Installation: Tremie Gravity

## SUMP/END CAP

Type: Schedule 40 PVC  
Length: 0.25 feet

## BACKFILL MATERIAL

Type: \_\_\_\_\_  
Volume: \_\_\_\_\_

## DEPTH TO WATER

During Drilling: 39.0  
Date: November 17, 2004  
Pre Development: \_\_\_\_\_  
Date: \_\_\_\_\_  
Post Development: \_\_\_\_\_  
Date: \_\_\_\_\_

Top of Bentonite Seal: 25.00

Top of Filter Pack: 27 feet

Top of Screen: 29 feet

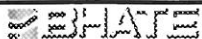
Bottom of Screen: 44 feet

Bottom of Well: 44 feet

Bottom of Filter Pack: 44 feet

Borehole Depth: 44 feet

Comments:



## WELL CONSTRUCTION DIAGRAM (Flush Mount)

SITE:	Discount Food Mart #183	WELL/BORING ID:	MW-14
PROJECT NAME:	Discount Food Mart #183	DRILLING METHOD:	Hollow Stem Auger
PROJECT NO./PHASE:	9040079	DATE(S):	16-Nov-04
DRILLING CONTRACTOR:	Technical Drilling Services, Inc.	SURVEYOR:	N/A
DRILLER:	Duncan Campbell	NORTHING (NAD 83):	N/A
GEOLOGIST:	Katherine Thompson	EASTING (NAD 83):	N/A

NOT TO SCALE

Surface Elevation (NAVD 88): N/A

Casing Elevation (NAVD 88): 839.130

Borehole Diameter (in): 8.00

Well Casing Diameter (in): 2.00

DEPTH TO WATER

During Drilling: 35.0

Date: November 16, 2004

Pre Development: \_\_\_\_\_

Date: \_\_\_\_\_

Post Development: \_\_\_\_\_

Date: \_\_\_\_\_

Top of Bentonite Seal: 23.00

Top of Filter Pack: 25 feet

Top of Screen: 27 feet

Bottom of Screen: 42 feet

Bottom of Well: 42 feet

Bottom of Filter Pack: 42 feet

Borehole Depth: 42 feet

PROTECTIVE CASING

Type: Steel

Dimensions: 8" Diameter

Length: 1 foot

SURFACE PAD

Dimensions: 2' x 2'

Type: Concrete

WELL CASING (RISER)

Manufacturer: Boart Longyear

Type/Material: Schedule 40 PVC

Diameter (in): 2.0

Connection: Threaded

WELL SCREEN

Manufacturer: Boart Longyear

Type/Material: Schedule 40 PVC

Slot Size (in): 0.010

Slot Type: Continuous Factory Slot

Connection: Threaded

ANNULAR SEAL

Type: N/A

Manufacturer: \_\_\_\_\_

Mud Scale: \_\_\_\_\_

Installation: Gravity Tremie Pressure

Volume: \_\_\_\_\_

Hydration Time: \_\_\_\_\_

BENTONITE SEAL

Manufacturer: \_\_\_\_\_

Product Name: Bentonite pellets

Size: 1/2"

Volume (ft3): \_\_\_\_\_

Installation: Tremie Gravity

PRIMARY FILTER PACK

Manufacturer: \_\_\_\_\_

Product Name: Silica Sand

Size: \_\_\_\_\_

Volume (ft3): \_\_\_\_\_

Installation: Tremie Gravity

SUMP/END CAP

Type: Schedule 40 PVC

Length: 0.25 feet

BACKFILL MATERIAL

Type: \_\_\_\_\_

Volume: \_\_\_\_\_

Comments: \_\_\_\_\_

# WELL CONSTRUCTION DIAGRAM (Flush Mount)

SITE: Discount Food Mart #183  
 PROJECT NAME: Discount Food Mart #183  
 PROJECT NO./PHASE: 9040079  
 DRILLING CONTRACTOR: Technical Drilling Services, Inc.  
 DRILLER: Duncan Campbell  
 GEOLOGIST: Katherine Thompson  
 WELL/BORING ID: MW-15  
 DRILLING METHOD: Hollow Stem Auger  
 DATE(S): 16-Nov-04  
 SURVEYOR: N/A  
 NORTHING (NAD 83): N/A  
 EASTING (NAD 83): N/A

NOT TO SCALE

Surface Elevation (NAVD 88): N/A

Casing Elevation (NAVD 88): 838.690

Borehole Diameter (in): 8.00

Well Casing Diameter (in): 2.00

DEPTH TO WATER

During Drilling: 35.0

Date: November 16, 2004

Pre Development:

Date:

Post Development:

Date:

Top of Bentonite Seal: 25.00

Top of Filter Pack: 27 feet

Top of Screen: 29 feet

Bottom of Screen: 44 feet

Bottom of Well: 44 feet

Bottom of Filter Pack: 44 feet

Borehole Depth: 44 feet

PROTECTIVE CASING

Type: Steel

Dimensions: 8" Diameter

Length: 1 foot

SURFACE PAD

Dimensions: 2' x 2'

Type: Concrete

WELL CASING (RISER)

Manufacturer: Boart Longyear

Type/Material: Schedule 40 PVC

Diameter (in): 2.0

Connection: Threaded

WELL SCREEN

Manufacturer: Boart Longyear

Type/Material: Schedule 40 PVC

Slot Size (in): 0.010

Slot Type: Continuous ☒ Factory Slot

Connection: Threaded

ANNULAR SEAL

Type: N/A

Manufacturer:

Mud Scale:

Installation: Gravity ☐ Tremie ☐ Pressure ☐

Volume:

Hydration Time:

BENTONITE SEAL

Manufacturer:

Product Name: Bentonite pellets

Size: 1/2"

Volume (ft3):

Installation: Tremie ☐ Gravity ☒

PRIMARY FILTER PACK

Manufacturer:

Product Name: Silica Sand

Size:

Volume (ft3):

Installation: Tremie ☐ Gravity ☒

SUMP/END CAP

Type: Schedule 40 PVC

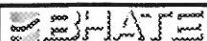
Length: 0.25 feet

BACKFILL MATERIAL

Type:

Volume:

Comments:



## WELL CONSTRUCTION DIAGRAM (Flush Mount)

SITE:	Discount Food Mart #183	WELL/BORING ID:	MW-16
PROJECT NAME:	Discount Food Mart #183	DRILLING METHOD:	Hollow Stem Auger
PROJECT NO./PHASE:	9040079	DATE(S):	16-Nov-04
DRILLING CONTRACTOR:	Technical Drilling Services, Inc.	SURVEYOR:	N/A
DRILLER:	Duncan Campbell	NORTHING (NAD 83):	N/A
GEOLOGIST:	Katherine Thompson	EASTING (NAD 83):	N/A

NOT TO SCALE

Surface Elevation (NAVD 88): N/A

Casing Elevation (NAVD 88): 836.360

Borehole Diameter (in): 8.00

Well Casing Diameter (in): 2.00

## DEPTH TO WATER

During Drilling: 35.0

Date: November 16, 2004

Pre Development:

Date:

Post Development:

Date:

Top of Bentonite Seal: 32.00

Top of Filter Pack: 25 feet

Top of Screen: 27 feet

Bottom of Screen: 42 feet

Bottom of Well: 42 feet

Bottom of Filter Pack: 42 feet

Borehole Depth: 42 feet

## PROTECTIVE CASING

Type: Steel  
Dimensions: 8" Diameter  
Length: 1 foot

Existing Surface

## SURFACE PAD

Dimensions: 2' x 2'  
Type: Concrete

## WELL CASING (RISER)

Manufacturer: Boart Longyear  
Type/Material: Schedule 40 PVC  
Diameter (in): 2.0  
Connection: Threaded

## WELL SCREEN

Manufacturer: Boart Longyear  
Type/Material: Schedule 40 PVC  
Slot Size (in): 0.010  
Slot Type: Continuous Factory Slot  
Connection: Threaded

## ANNULAR SEAL

Type: N/A  
Manufacturer:  
Mud Scale:  
Installation: Gravity Tremie Pressure  
Volume:  
Hydration Time:

## BENTONITE SEAL

Manufacturer:  
Product Name: Bentonite pellets  
Size: 1/2"  
Volume (ft3):  
Installation: Tremie Gravity

## PRIMARY FILTER PACK

Manufacturer:  
Product Name: Silica Sand  
Size:  
Volume (ft3):  
Installation: Tremie Gravity

## SUMP/END CAP

Type: Schedule 40 PVC  
Length: 0.25 feet

## BACKFILL MATERIAL

Type:  
Volume:

Comments: